THE GOOD OLD DAYS

OF

HONORABLE JOHN COMPANY,

BEING

CURIOUS REMINISCENCES

ILLUSTRATING

MANNERS AND CUSTOMS OF THE BRITISH
IN INDIA

DURING THE RULE OF THE EAST INDIA
COMPANY, FROM 1600 TO 1858;

WITH BRIEF NOTICES OF

PLACES AND PEOPLE OF THOSE TIMES,
&c. &c. &c.

VOL. III.

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TO THE PUBLIC.

The Compiler has to apologise for the great delay that has occurred in the preparation of the third volume. This has arisen from the multiplicity of his engagements, in connection with the *Simla Argus* newspaper, from which he has only lately been partially freed.

CHAPTER I.

THE FRENCH IN INDIA.

The French, says Malleson (from whose work we gain the greatest part of the following information,) made some feeble attempts at trade with the East in the sixteenth century, and the enterprise was renewed in the succeeding age under the auspices of Cardinal Richelieu; but it was not until the time of Colbert that anything of real moment was attempted. That minister resolved to found a company for the purpose, and if the lavish grant of privileges could have accomplished it, the whole trade with India must have fallen into French hands. He procured a declaration from Louis XIV, that even a nobleman might engage in the India trade without derogation to his birth, and thus (and to please the King) many of them were induced to subscribe to the "Compagnie des Indes," which was formed in 1664. A charter was granted conferring on it the exclusive right of commerce with India for fifty years, besides an entire exemption from taxation, and the Government guaranteed the Company from all loss during the first ten years. But the spirit of commerical enterprise was not very strong in France, and beside all these privileges, the Treasury had to supply £120,000 out of the capital of £600,000, with which the Company started.

The first step taken was the formation of a settlement in Madagascar, to serve as a "half-way house" on the Indian voyage, but this was unsuccessful. Most of the settlers very soon perished, either from the deadly climate or the hostility of the natives; of the survivors, some repaired to the Isle of Bourbon, and others proceeded to India, where in the meantime the first French factory had been established at Surat in the year 1668. Masulipatam, on the opposite coast, was founded in the next year, and in 1672 St. Thomé (near Madras) was captured from the Dutch, but was retaken two years after, when Pondicherry was founded in its stead. Chandernagore, in Bengal, was founded in 1688, up to which time the progress of the French had gone on unchecked. Pondicherry was taken by the Dutch, in 1693, but was restored at the peace of Ryswick. Henceforth it was the seat

of the French power in India, until its fall in 1761. Of this period of a century, much the greater part is comparatively uneventful; but the thirteen years' rule of Dupleix is crowded with incident, and his is, beyond compare, the most famous name in the annals of French India.

The founder of Pondicherry was Francois Martin, a Frenchman who had been in the service of the Dutch, but who had left them to join the French Company. Foreseeing that war was likely to break out between the two nations, he had some time before the capture of St. Thomé, purchased a tract of land near the river Gingee, and thither he repaired in 1674 with about sixty Europeans, whilst the rest of the French factory retired to Surat. He carried with him a large sum of money, and by lending a portion of it to the neighbouring native chief, Shere Khan Lodi, he readily obtained permission to form a settlement, around which a native town speedily grew up, the inhabitants of which were employed in manufacturing piece-goods for their French friends.

So things went on for almost twenty years, when, as before stated, the Dutch captured the place, and finding its situation very advantageous, strongly fortified it. These fortifications were improved when it came again into the hands of the French; and Martin, who had now become Director General of French affairs in India, resided at Pondicherry until his death in 1706. He adopted a "conciliatory policy," and ever represented himself and his nation as the very humble servants of the native princes, anxious only for trade, and to be at peace with every body; but he always took care to add that the other white men were of a different character, and so it was necessary that the French should be allowed to build fortifications and hire troops alike for the safety of themselves and of their patrons. Loans of money to some, and presents of French cordials to others, made all this quite clear to princes and dewans, and a footing was thus gained by the quiet, cautious Martin, that it took all the magnificent genius of Dupleix to destroy.

Colbert's company may be said to have died a natural death about the same time as Martin. It had some few other settlements beside Pondicherry, but only one of them (Chandernagore in Bengal) survived him, and for about ten years its powers were in abeyance, or else transferred, for a slight royalty, to private traders. But in 1714 it obtained a renewal of its privileges for ten years, and soon after the scheming Law united it with several other associations under the name of the "Perpetual Company of the Indies," which

it was hoped would engross the trade of France both with the East and the West. The disastrous failure of most of his projects is too well known, but this Indian Company had a career of half a century before it, far more brilliant than that of its predecessor, but having a more than equally disastrous termination.

The first Governor under the new arrangement was M. Lenoir, who endeavoured to carry out the peaceful policy of his predecessor, and succeeded in bringing back the lost trade of the settlement. His successor, M. Dumas, did the same, but began to show a tendency to make Pondicherry something more than a mere comptoir. He was a shrewd, calculating, prudent man, one not given to risk much without having in view a very tangible result; brave, resolute, jealous of the honor of France, and thoroughly acquainted with native ways. He took a world of pains to make Pondicherry agreeable to any of the native rulers who visited it, and he thus formed the very serviceable friendship of the most powerful of his neighbours, Dost Ali Khan, the Nawab of the Carnatic, in whose territory the French settlement was situated.

Dost Ali also befriended him with his own superior Nizam-ool-Moolkh, the Subadar of the Dekkan, and in consequence a license to coin money was granted to him, which was a source of both honor and profit. But by venturing to defy the power of the Mahrattas, and giving shelter to the families and treasures of Dost Ali, and his son-in-law Chunda Sahib, who were at war with them, he took the first decided steps towards the foundation of a Franco-Indian empire. To support himself in the expected conflict he greatly strengthened the fortifications of Pondicherry, raised a force of 1,200 Europeans, and also a body of 4,000 or 5,000 natives, who were armed and drilled in the European manner, thus forming the first known sepoy corps. The stand that he made against the Mahrattas, though an actual conflict was avoided by his prudence, was very pleasing to the Mogul ruler of Delhi, and, as a mark of distinction, the title of Nawab was conferred on Dumas, together with the command of a body of 2,000 horsemen as a guard; thus he was officially recognised as an officer of the Mogul Empire, and he succeeded in having both title and guard continued to his successor. This successor was Joseph Francois Dupleix, a man who at once resolved to push such advantages to the uttermost, and to convert the honorary title of Nawab, into something very substantial both for his nation and for himself.

Dupleix was the son of a director of the former Company

and came to India when quite a young man. After some years' service at Pondicherry in a subordinate capacity, he was sent to Chandernagore, which was then in a decaying state. Here he set resolutely to work to remedy the numerous evils that he saw around him, and by embarking in the trade on his own account he not only served the Company, but made his own fortune. But this fortune, as he afterwards showed, he was ready to risk or lose, if by so doing he could forward the ambitious designs that he nurtured. These designs his appointment to the government of Pondicherry gave him the opportunity of attempting to carry out. He failed but Major Malleson attributes the fact, not to any fault of his own, but to the envy which his superior genius provoked, and which led his own countrymen to be more bitterly inimical to him than any of his professed enemies. Indeed, he is more than once likened to Napoleon, and it cannot be denied that in some points, the likeness is perfect. Boundless ambition, unscrupulousness as to means, and great fertility of resource in adverse circumstances are common to both; as is also an obstinate adherence to views once entertained, even though circumstances had totally changed; and there is, moreover, a resemblance in their fate, each being too aggressive, and never looking on any success but as the stepping stone to something further. Thus it was that France both in the 18th and 19th century, grew tired of its chief men, who were so troublesomely great, and preferred peace, though not very honorable, to the destructive "glory" by which the Indian Governor and the Emperor would have sacrificed the world.

Dupleix assumed office at Pondicherry in October 1741, and at once began to carry out his cherished idea of making the French respected as a great power in India, and himself known as something very different from the humble and peaceable Governor Martin. He was installed as Nawab with much pomp, received the formal homage of the neighbouring chiefs of lower grade, and acted to the life the "high official" of the Mogul Empire. Soon after this, war broke out between England and France, and he at first flattered the vanity of the Nawab of the Carnatic by formally imploring the protection of the Mogul; but he also took good care to strengthen his fortifications. The application was successful, and the English at Madras were prohibited attacking him. But this prohibition had no weight for the English fleet, which had reached India even before the commencement of hostilities, and Dupleix sent for assistance to the Isle of France, where La Bourdonnais, who was to become his bitter rival, was then Governor.

La Bourdonnais was a native of St. Malo, a thorough sailor, who had settled in the Isle of France, and made it a formidable post. He had long cherished a design to capture all the English settlements, on the occasion of the breaking out of a war, and at his own request he had been entrusted with a fleet for that purpose. But the French Ministry altered their mind on the subject, recalled the ships, and left him to such resources as his own island could supply ; then they again thought better of it, and sent him back half the number. La Bourdonnais, however, was equal to the occasion, and by seizing on every French ship that came to the island, and working night and day, he at last got together a fleet of respectable force which he ordered to rendezvous on the coast of Madagascar, as there only could he procure food for the crews. He followed them, in March 1746, but a tempest gave him all his work to do over again, and he did it well, though with most inadequate means, and in the deadly climate of Madagascar.

After a skirmish with the English fleet off Negapatam, La Bourdonnais reached Pondicherry, and here a rivalry soon appeared between him and Dupleix. Each esteemed himself too great to be the subordinate of the other. There was, in truth, a clashing of authority. La Bourdonnais was unquestionably free from the control of Dupleix so long as he kept the sea, but when he landed, Dupleix, as Governor General, conceived he had the right to call on him for any service that might be required, and accordingly, he wished to dispatch him against the English settlement of Madras. This, La Bourdonnais was willing to undertake, but knowing, as a seaman, the want of proper shelter for his ships at Madras, he desired first to meet the English fleet, hoping to capture it, and then to besiege the settlement without fear of interruption.

Madras had been for more than a century in the hands of the English, and though they had some other factories nearer to Pondicherry, it was thought that the capture of Madras would entail the fall of the rest, and the whole trade of India would then come into the hands of the French. After some fierce disputes with the Council of Pondicherry (or rather with Dupleix, for his councillors seem to have been but ciphers in his hands,) La Bourdonnais sailed to Madras, and captured it with little difficulty. Then arose even a sharper dispute than before. Dupleix had found out that his aggressive policy was suspected by Anwar-ood-een, the Nawab of the Carnatic, and he therefore announced that he had no wish to keep Madras, but, on the contrary, was anxious to give it up to that prince ; but this was with the

mental reservation that before he did so, he was resolved to dismantle its fortifications. His measures, however, were disconcerted by La Bourdonnais, who, acting on his own authority, allowed the English to ransom the town, receiving himself a present of £ 40,000; a discreditable fact that is now first proved, by reference to existing documents. Dupleix protested, but in vain; some commissioners that he sent to La Bourdonnais were arrested by him, and, to add to his difficulties, the Nawab dispatched a body of troops to claim the surrender of the place. By every art that he could employ, (and he is allowed to have been a most adroit diplomatist) Dupleix kept the Nawab for a long time in daily expectation that it would be delivered up, and when the prince's patience was exhausted, he dropped the mask.

La Bourdonnais had by this time withdrawn with his fleet, Dupleix's authority was recognised at Madras, and he resolved to hold it at all hazards. A body of native troops attacked it, but were dispersed by a few rounds of artillery; and, two days later, the whole Mogul host was put to flight by a spirited assault on their camp at St. Thomé, near the town. This was on 4th November 1746, a day which at once changed the positions of the two opposing parties.

Dupleix now plunged boldly into the game for empire. The pretence of submission to the Nawab of the Carnatic was thrown aside, and the prince in consequence leagued himself with the English, who, expelled from Madras, had thrown themselves into Fort St. David, a post much nearer to Pondicherry, and were prepared to defend it to the last. Among them was Robert Clive, and, although then in a very subordinate position, he showed the stuff of which he was made. Several attempts on the town failed, and at last the enterprise was reluctantly abandoned.

The fortune of war now turned against the French, and in 1748, Dupleix had to defend Pondicherry itself from Admiral Boscawen. This he did successfully, and never was triumph made more of. "Messengers were instantly dispatched to Arcot, to Hydrabad, even to Delhi, to acquaint the native potentates how the most formidable foreign army that had ever landed in India had been shattered against the walls of Pondicherry. Letters of congratulation poured in on him on all sides. The English were regarded as an inferior, almost an annihilated power; and Dupleix was invested with an influence and an authority, such as had up to that time devolved upon no European leader on Indian soil." His pride was at its height, when he received the unwelcome news of the peace of Aix-la-Chapelle, in consequence

of which he was obliged to surrender Madras, not to the Nawab as he had promised, but to the English, and with its fortifications greatly strengthened.

This war, brief as it had been, had effected a total change in the relations between the English and the French Companies, as great a change indeed as between them both and the native powers. Dupleix had let it be seen that he aimed at nothing short of total expulsion of the English from the Carnatic, and he had more irritated than alarmed the natives, who, as he now plainly saw, would never more trust to peaceful professions. Hence though there was peace between England and France, there was none between the Companies, and each kept an army in the field to fight the battles of any native prince who required their services, though far less with the intention of helping him than of striking a deadly blow at his European rival.

An opportunity soon occurred for a renewal of the war in this unavowed manner. Sahoojee, the Hindoo rajah of Tanjore had been expelled about a dozen years before by Chunda Sahib, who had been mentioned as on friendly terms with the French. He now offered a large sum of money and the cession of the important town of Devicotta to the English for their assistance in recovering his throne. It was readily granted, but the people of Tanjore were found unwilling to receive their old ruler. Devicotta, however, was taken by storm, and thus the English obtained a valuable footing in the Tanjore country. As to Sahoojee, he was pensioned by the English Company, and an alliance was formed with Pertab Sing, who then occupied his throne; Chunda Sahib, who formerly drove him out, having himself been since taken prisoner by the Mahrattas.

To counterbalance the increase of strength that the English had thus gained, Dupleix now paid a heavy ransom to the Mahrattas for Chunda Sahib, who was set at liberty after an imprisonment of seven years. Chunda Sahib was son-in-law to Dost Ali, the patron of Dumas, who had been killed in battle in 1793, when the post of Nawab of the Carnatic passed by the regular course of the appointment, from the Subadar of the Dekkan, to Anwar-ood-een, the same prince that had been defeated in his attempt to possess himself of Madras. Dupleix therefore now brought Chunda Sahib forward and gave him such effectual support that the Nawab was soon after defeated and killed. This was in the battle of Amboor, which was fought on the 3rd of August 1794. The French brought 400 Europeans into the field, as well as 2,000 natives drilled in the European fashion, and

Anwar-ood-een, on his side, had sixty European adventurers of various nations, who served his artillery with considerable effect. Another prince, Mozuffer Jung, had also entered into alliance with Dupleix, but to explain how he was essential to the views of the ambitious Frenchman it will be necessary to glance at the history and constitution of the Mogul empire, of which Dupleix boasted of being a great officer.

When at the close of the 14th century, Timour overthrew the monarchy of Delhi, no less than six independent states sprung up in the country between the Nerbudda and the Kistna, which is known by the general name of the Dekkan. In the course of time the Mogul sovereigns, whose seat was at Delhi, reconquered a large portion of the country, but a part of it had fallen into the hands of the Mahrattas, who successfully resisted all attempts to subjugate them. Thus matters stood at the time of the famous Aurungzebe (1707). A civil war broke out among his sons, when a viceroyalty of the Dekkan was created to reward the services of Zoolfikar, an able general, who, though he had fought on the losing side, became a favorite with the conqueror. This was a most important post, and its holder, termed the Subadar, had the power, on a mere nominal reference to Delhi, of creating and removing all his subordinate rulers, or nawabs, among whom was the Nawab of the Carnatic, who though a very great man to the early European settlers, was in reality of not much importance in the eyes of the Great Mogul. When the next war broke out among the princes of Delhi, Zoolfikar was strangled, and the viceroyalty was then given to Chey Koolich Khan, with the title of Nizam-ool-Moolk, by which he and his successors in office were better known than by their own names.

The subadarship was not an hereditary office, but its holders tried to make it so, and of none was this more true than of Asof Jah, who held the post during the early part of Dupleix's rule. Mozuffer Jung was his grandson, the offspring of the favorite daughter, and the old man wished him to succeed him in preference to either of his sons, one of whom, Nazir Jung, was in open rebellion and another, Ghazee-ood-een, was in high favor at the Court of Delhi, and did not care to leave it for the subadarship. The requisite permission was obtained from Delhi, but on the Nizam's death Nazir Jung seized his treasures, put his nephew in irons, and ruled in his stead. Mozuffer made his escape, joined with Chunda Sahib, and when the battle of Amboor had been gained, proclaimed himself subadar of the Dekkan, and in virtue of his office nominated Chunda Sahib, Nawab of the Carnatic.

The two princes paid a visit to Pondicherry, where they were magnificently received, but Dupleix saw that their work was not completed, as Mahomed Ali, a son of Anwar-oodeen, had still possession of the strong fort of Trichinopoly, and Nazir Jung was collecting a force to crush his nephew. Urged by him, they set out to attack Trichinopoly, but having spent on their own pleasures a large sum of money that he had advanced to them to pay their troops, they turned aside to attack Tanjore thinking to frighten Pertab Singh, the then rajah, out of a portion of his riches, which were known to be immense. But they did not succeed in this; the rajah, without absolutely refusing detained them before his walls, sometimes sending out a few trifling jewels, at others bags of short weight coins which they refused to take; and thus the time passed away until Nazir Jung approached with a large army, and they fled precipitately to Pondicherry. Nazir Jung followed them, having 600 English troops under Major Lawrence with him, a mutiny broke out among the French officers, and in the end, Mozuffer Jung submitted to his uncle, who again put him in irons, proclaimed himself subadar, and made Mahomed Ali nawab.

Thus all Dupleix's schemes had failed, but he did not lose heart. He pacified his mutinous officers from his own purse, with which he was always ready, and then sent d'Autueil, on whom he had great reliance, against Mahomed Ali, who having quarrelled with his English allies was speedily put to flight. Nazir Jung was soon after assassinated, in consequence of a conspiracy abetted if not formed by Dupleix, who had paid agents in his camp, and Mozuffer Jung then again became subadar.

To make it obvious to all, to what power he owed his success, Dupleix held a solemn assembly in the grand square of Pondicherry where he invested Mozuffer Jung as subadar of the Dekkan, and was in return created by him Nawab of the Carnatic. This office he declined to hold in person, and contenting himself with the title alone he made over the emoluments to Chunda Sahib; not forgetting, however, to secure a cession of lands for the company, which repaid all the expenses of the war, and left a handsome annual revenue beside. Lastly, in true oriental style, and well knowing the people he had to deal with, he ordered the foundation of a town on the site of the battle where Mahomed Ali had been defeated, which was to bear the name of "Dupleix-Futteh-abad," meaning "The place of the Victory of Dupleix;" but the triumph was premature, and the town struggled into existence merely to be destroyed by Clive. Indeed, it was

soon seen that the victory which it was to commemorate was by no means decisive, as Mahomed Ali had again taken refuge at Trichinopoly, and having again come to terms with the English, he received a garrison from them which Dupleix was never able to reduce.

Mozuffer Jung now prepared to visit the northern part of his subadarship, and Dupleix sent with him, at his request, Bussy, one of his best officers, and a contingent of 300 Europeans and 2,000 Sepoys, considering that he should thus become the real ruler of the country. On the march battle occurred with some disaffected nawabs, in which Mozuffer was killed, when Bussy, with the consent of the principal officers, bestowed the subadarship on Salabut Jung, an uncle of the deceased, who was taken from a prison, and having been made a prince by the French, proved a very useful puppet in their hands. According to our author, Bussy and his troops were model mercenaries, but this did not reconcile Syud Lushkur, the subadar's minister, to their presence, and he did his utmost to get rid of them. They maintained themselves, however, in spite of him, and Bussy procured, either from the fears or the gratitude of Salabut Jung, not only a confirmation of Mozuffer Jung's grants to Dupleix personally, but also the cession of a large tract of country known as the Northern Circars, which formed a very desirable addition to the French settlement of Masulipatam.

Thus, in the part of the Dekkan most remote from Pondicherry, the policy of Dupleix seemed a complete triumph, but nearer home it presented a very different aspect. Neither his patent as Nawab from Delhi (the genuineness of which was greatly doubted), nor his patent of Marquis from France, which reached him much about the same time, could bring Trichinopoly, so long besieged, under his rule. It was defended by the gallant Lawrence, and against him all the efforts of the French and their allies were in vain. Our author appears to us to judge rather harshly of some of the French officers, particularly of Law, the nephew of the famous financier, but still his narrative of the siege is a most interesting one. He remarks that, in its course many incidents occurred that never ought to be forgotten, and he particularly mentions the action of the 7th July 1753, as deserving of undying remembrance.

Trichinopoly was the rock upon which the towering ambition of Dupleix was wrecked. The more unlikely it seemed to become his, the more earnestly did he strive for it, and this course he pursued until he had hardly a man or a rupee left. But all was in vain. A reinforcement of 700

men sent to him from Europe perished at sea, and, to gain time, he at last proposed a conference to treat of peace with the English Governor of Madras. But when the commissioners met it was at once evident that his pride was in no wise abated, for he proposed, as the terms of accommodation, that all his interferences with the native princes, and all his schemes of personal aggrandisement, should be recognised by the opponents. A conqueror could not have demanded more than he did; but he overshot his mark. He insisted that he himself should be recognised as Nawab of the Carnatic, and that Salabut Jung, who in reality owed his elevation to Bussy, should also be acknowledged as Subadar of the Dekkan. The English, on the other hand, upheld the claim of Mahomed Ali, denied the right of Salabut Jung, and, worst of all, treated Dupleix's own patent as a forgery, which it very probably was. A slight success of his troops occurring at this time, rendered him more imperious than ever, and the conference broke up, having had only this result, that both the French and the English Companies, as well as the Ministers in Europe, were now equally anxious that Dupleix should be removed, the peace that all so much needed being evidently impossible whilst he remained in power. He was accordingly recalled in disgrace to France, in 1754, and died some years after in comparative poverty, though having a claim, which our author considers well founded, for 13,000,000 francs, expended in striving to create for his country an Indian Empire.

The story of French India is but brief after the fall of Dupleix. He was succeeded by M. Godeheu, a man, very probably of less energy of character, than Dupleix. Following out the instructions that he had received, he made a peace with Mr. Saunders, the English Governor of Madras, by which Dupleix's dream of empire was cast to the winds. Its very first article stipulated that the two Companies "should renounce for ever all Mogul dignities and governments, should never interfere in the differences that might arise among the princes of the country," and the remaining articles, which divided the grand prize of the Northern Circars between England and France, and made several re-arrangements of territory, were all to the disadvantage of the latter power. Indeed our author considers that Governor Saunders ought to be recognised as at least a joint founder of the Anglo-Indian Empire, and that an injustice is done when all is ascribed to Clive.

M. Godeheu left India in a few months after signing the peace with Governor Saunders, which, indeed, seems to have

been his principal business in India. He was succeeded by M. Leyrit, who appears to have had something of Dupleix's spirit, and entered afresh into combinations with the native princes. This he was justified in doing, as England and France were again at war; and, to strengthen his hands, a large force was sent out under the command of Count Lally, an officer of Irish extraction who had distinguished himself at Fontenoy. Here again as with Dupleix and La Bourdonnais, was a case of divided authority, but with still more disastrous results. Lally, though a good soldier, was a passionate imperious man, who took no pains to conceal his contempt for everybody and everything connected with India. He thus made enemies of the officers who, as having long served in the country, were the best able to assist him, and also gave deadly offence to the natives by compelling high-caste men to serve as porters, and carry the baggage of his army. He captured Fort St. David, but besieged Madras in vain, and was soon after totally defeated at Wandewash by Coote. The victor followed him up, and by the capture of Pondicherry after a month's siege, brought the history of the fondly-imagined Franco-Indian Empire to a close. Lally returned to France, only to suffer, like Admiral Byng, for other men's offences as well as his own, and the "Perpetual Company" itself expired in 1769, only three years after his unquestionably unjust execution. Pondicherry, Chandernagore, and the other French settlements, have been captured in each succeeding war, and restored at each subsequent peace; but being merely mercantile establishments they have no history, politically speaking.

CHAPTER II.

THE PORTUGUESE IN INDIA.

In 1508 the Portuguese flag waved triumphantly from the Straits of Gibraltar to Abyssinia, and from Ormus to Malacca; in 1528, Portugal possessed Mangalore, Cochin, Ceylon, Ormus, Diu, Goa, and Negapatam, so that, as an old traveller remarks, "her commerce and empire of the sea made Portugal the least part of the Portuguese crown."

John Sylveira was the first Portuguese who came to Bengal; he arrived in 1518, and remained there a long time, "learning the commodities of the country and the manners of the people." The Portuguese never established a regular government in Bengal as in other parts of India; numbers of adventurers hired themselves out as soldiers to native powers near the Ganges, or turned pirates. In 1538, a large body of Portuguese entered Bengal as military adventurers in the service of the King of Gour—thirty-seven years before Gour, the "seat of a hundred kings," the abode of pomp, and power and splendor for 2000 years, had yielded to the effects of plague and was reduced to a desert. In 1655 we find the Portuguese had sought refuge in Arrakan, where in concert with the Mugs, they used to engage in piratical voyages to the lower districts of Bengal, kidnapping the natives and pillaging and destroying the populated villages and towns at the mouths of the Ganges.

The Portuguese settled in Dacca during the reign of Akbar, shortly after they had selected a spot for their residence at Hooghly. Dacca had then a population of 200,000, and was the resort of merchants from various parts of Asia. They erected a convent there, and their first friar officiated in it in 1612. When visited by the traveller Fitch in 1586, the Portuguese had sole authority in that part of the country.

In a note attached to the 6th section of Stewart's History of Bengal, we find it stated "as a circumstance worthy of remark, that the name of Hooghly is never mentioned in Faria de Souza's History of the Portuguese, although he acknowledges that they lost a large town in

Bengal in the year 1633, but which he calls Golin." But the identity of Golin and Hooghly is settled beyond controversy by an inscription in the church at Bandel, in which the neighbouring convent of Ugolym is distinctly mentioned. Hooghly owed its celebrity to the Portuguese, before whose time it was probably an inconsiderable village. They are stated to have established a factory and built a fort there in 1599, or more probably 1537 : in the year 1599 the missionaries of the order of St. Augustin founded the cathedral church of St. Paul, and the church of Miserecordia. The Portuguese settlement appears to have risen rapidly to great magnificence.

In Hamilton's time it is stated—"The town of Hooghly drives a great trade, because all foreign goods are brought thither for import, and all goods of the product of Bengal are brought hither for exportation; and the Mogul's furze or custom house is at this place; it affords rich cargos for fifty or sixty ships yearly, besides what is carried to neighboring countries in small vessels, and there are vessels that bring saltpetre from Patna."

Hooghly is famous for the siege the Portuguese sustained for three months and a half in 1632, against an army of Moguls; when the Portuguese displayed the most heroic bravery worthy of the days of Albuquerque. De Mello, a Portuguese half-caste, betrayed Hooghly fort, by pointing out a track through which the enemy entered; even then the Portuguese fought from the houses within the fort.

The fortifications were undermined, and the Mogul troops rushed in as soon as the mine was sprung, and subjected the place to indiscriminate plunder. It appears that, at the time, there were no fewer than sixty-four large vessels, fifty-seven grabs and two hundred sloops anchored off the town, of which it is said that only three escaped. All the property afloat or ashore was of course confiscated. The pictures and images which adorned the churches, and had given such great offence to the Mahommedan emperor, were taken down and destroyed. A thousand Portuguese fell in the siege, and four thousand were made prisoners, of whom all the priests, and five hundred of the handsomest boys and girls are stated to have been sent to the Imperial Court of Agra.

The chief causes that provoked the Moguls were, that the Portuguese tyrannically exacted duties from the boats and vessels that passed Hooghly; that they entirely drew away all the commerce from the ancient port of Satgaon; that they were in the habit of kidnapping or purchasing

young children and of sending them as slaves to other parts of India, and that the Portuguese pirates ravaged the eastern parts of Bengal.

On account of the services which the Portuguese, who came to Bengal in 1538, rendered the King of Gour, in those frequent disputes that occurred between rich zemindars and their rulers, the Portuguese got Bandel, where they built a fort for their security in 1599; at which time the church was also erected. This edifice is the oldest christian building in Bengal. After the siege of Hooghly the church of Bandel was pulled down and all the records destroyed, but it was rebuilt by Mr. Soto in 1660. Near it stood the church of Misercordia, founded by the Augustinians, to which an orphan house was attached. There was also a nunnery, and a college of Jesuits.

In Bengal the trade of the Portuguese must have been considerable; for on Hooghly fort being taken in 1632 by the Moguls, the Portuguese offered to pay an annual tribute of four lakhs, on condition of being allowed to trade in Bengal with their former terms and privileges.

The Portuguese are represented by Fryer in 1680, as "wallowing in wealth and wantonness; generally forgetting their pristine virtue; lust, riot and rapine, the ensuing consequences of a long undisturbed peace, where wealth abounds, are the only reliques of their ancient worth; their courage being so much effeminated that it is a wonder how they keep anything, if it were not that they lived among mean spirited neighbors." "The Portuguese," says Alfonzo De Souza, Governor of India, in 1545,—" entered India with the sword in one hand and the crucifix in the other; finding much gold, they laid aside the crucifix to fill their pockets, and not being able to hold them up with one hand, they were grown so heavy, they dropped the sword too; being found in this posture by those who came after, they were easily overcome." The Dutch soon supplanted the Portuguese in the Eastern seas, taking their colonies and burning their ships; and the English and French increased in power and influence while the Portuguese gradually declined, till now they are hardly known in India, except in the possession of Goa, which they still hold.

They settled at Chittagong about 1720. When Job Charnock settled in Calcutta in 1689, a number of Portuguese accompanied him from Hooghly. A chapel of brick masonry was built here by Mrs. Tench in 1700, which was enlarged in 1720 by Mrs. Shaw. In 1756 the place was pillaged and the records burned. In 1796, two rich brothers,

Baretto, from Bombay, coming forward with liberal subscriptions, the old chapel was pulled down and a new building erected at a cost of 90,000 rupees. The Cathedral Church deRozario was built in 1799; Baitakhana church was founded in 1809; Durrumtollah church was founded in 1834, by the widow of DeSouza, a rich merchant of Calcutta.

Baranagore, near Calcutta, was once a Portuguese settlement; Chandernagore had formerly Portuguese priests.

The church at Serampore was built by the Baretto family in 1783, it cost 14,000 rupees.

CHAPTER III.

THE DANES IN INDIA.

The Danes originally established their trade in Bengal in 1698, and paid 30,000 rupees in ten annual instalments for their firman, which was granted them by the Prince Azeem-ud-din, the grandson of the Emperor Aurungzebe.

In 1753, we find Mr. Soetman, the chief of the Danish establishment, residing at Chandernagore, where the vessels consigned to him unloaded their cargoes. The return cargo was shipped from that town, as the property of the Governor, M. de Lejrit, though not without many disputes with the Nawab's custom house officers, who doubtless had some suspicions of the ownership of the goods. The Danish factors therefore felt the necessity of obtaining a settlement which they might call their own in Bengal, and they opened a negotiation with the Nawab, through the well known Mons. Law, the French Agent at Cossimbazar, who enjoyed pre-eminent influence at the Moorshedabad durbar. There were no public posts in Bengal at that time; and M. Law's letter of the 30th July, announcing that he had succeeded in obtaining a *perwanna* for the erection of a factory at Serampore, was twelve days in reaching Chandernagore.

M. Law himself arrived with that document on the 6th of September, together with an order on the Fouzdar of Hooghly to deliver possession, but a month elapsed before the arrangements with this important personage could be completed. Old Soetman's records say, "We went to Ackna and Serampore on the 7th October 1755, to take possession of our ground with the necessary ceremonies, but the whole day passed in disputes, and we were obliged to go there again." They were entitled by the Viceregal firman to the occupation of sixty bigahs of ground. They preferred taking three bigahs in Serampore and fifty-seven in Ackna; because "no ship could lay at Ackna, though a good factory might be built there on a large open spot of ground," They discovered that if they took the whole quantity in Serampore, they would have been obliged to purchase all the houses which stood in it, of the value of 10, or 12,000 rupees. This

shows that the village was of some mark even before a European settlement was established in it. Soetman, therefore contented himself with the river frontage, and the secure anchorage before it.

On the 8th of October 1755, the Danish flag was hoisted at Serampore and four peons were appointed to guard it. The expenses incurred at the Durbar in obtaining the firman, in presence of the three Nawabs, and in the purchase of the ground from the proprietors, had amounted to a lakh and sixty thousand rupees, £ 16,000. The factory, however, advanced slowly.

On the 15th of December, Ziegenbalk, the second in command, re-measured the ground, and it was resolved to surround the factory with a mud fence and a straw roof, to protect it during the rains. Most opportunely, some one at this time offered to enter the Danish service on 40 rupees a month, to superintend the building of the factory and the fencing of the ground, if he was honored with the rank and title of Lieutenant; whereupon Soetman and Ziegenbalk passed an order in council, that "if he could not be prevailed on to serve for less, he should have 40 rupees, but without a free house or lights." It was just at this juncture that the young Nawab, Seraj-ud-dowlah passed down with 50,000 men on the opposite bank, breathing vengeance on the English for having fortified Calcutta and given protection to Kissendass. He sent across the water to order Soetman to join the army with all his troops, cavalry, infantry and artillery; to which the Governor replied, that he had neither horse, foot or guns, but was living in a miserable mud hut, with only two or three servants.

The settlement grew and flourished under the predominance of European influence in Bengal, and participated in that security for property, which the establishment of the English Government had introduced. It was also greatly assisted by the capital of the servants of the English East India Company.

At the close of the American war, England was involved in hostilities with the three maritime nations of North America, France and Holland, and English vessels were exposed to the attacks of privateers, and English trade subjected to very heavy insurances. These were the golden days of Serampore commerce. Before the close of that war, no fewer than twenty-two ships, mostly of three masts, and amounting in the aggregate to more than ten thousand tons, cleared out from the port, in the short space of nine months. This trade, though eminently profitable to the Danish East India

Company, was perhaps still more advantageous to their factors who, while in the receipt of salaries not exceeding two hundred rupees a month, drank champagne at 80 rupees a dozen, and in a few years returned to Denmark with large fortunes. The late John Palmer, of Calcutta, usually styled the prince of merchants, was the agent of the Danish Company, and has repeatedly stated, that he has sat, day after day, in the godowns at Serampore, counting and weighing out goods, and that he seldom realized less than a lakh of rupees a year.

The first interruptionwhich the trade of Serampore received, after a course of uninterrupted prosperity for forty-five years, was in the year 1801, when, in consequence of hostilities between England and Denmark, it was sequestered by the English authorities. But it was restored almost immediately after, at the peace of Amiens, and the loss was rapidly repaired.

For five years after, it throve beyond all former example. As the Bay swarmed with French privateers, and insurances had risen almost to a prohibitory rate, the merchants of Calcutta eagerly availed themselves of the neutral flag of Denmark, and obtained Danish papers and Danish commanders for their vessels as a protection against the privateers which infested the Sand Heads. English vessels fell into the hands of the French by the dozen, and were carried to the Isle of France and confiscated.

In 1808, the sun of Danish prosperity set for ever in Bengal, after it had shone for a little more than half a century. England robbed Denmark of her fleet at Copenhagen, and a detachment of British troops crossed over from Barrackpore and took possession of the town, and of the well filled store houses of Serampore, while the Hon. Captain George Elliot, the son of the Governor General, Lord Minto, sent up the boats of the *Modeste* frigate, which he commanded, and seized on three rich vessels lying in the harbour. From the blow thus inflicted, the Danish East India Company never recovered.

Serampore was restored after the pacification of Europe in 1815, but the Company was on the verge of bankruptcy. The traffic in country piece goods, which had been the staple of Danish commerce, had begun to yield to the rivalry of English manufactures, and, a short time after the restoration of the town, the products of English power looms, completely extinguished the trade in Indian goods. Since 1815, one vessel, and one vessel alone, has visited the port.

For many years past the settlement had been maintained only by draining the home treasury. The king of Denmark therefore yielded to the wishes of his people, and disposed of possessions which entailed a heavy expense; and Serampore and Tranquebar were, at the beginning of 1844, transferred to the British Government, for the sum of twelve lakhs of rupees (120,000£,) and on the 11th of October 1845, just ninety years and three days after Soetman had first hoisted the Danish flag in that town, it was taken down, and the English colors hoisted in its stead.

CHAPTER IV.

THE DUTCH IN INDIA.

EARLY in the sixteenth century, whilst James I was studying Hebrew at Hampton Court, the English and Dutch were trying to establish fortified factories on the Coast of Coromandel, in order to exchange the cloths of that locality for the pepper and spices of Java and the Moluccas. The Dutch came first and erected a great square massive Fort at Pulicat, about 30 miles to the north of the present site of Madras, and another at Sadras, about 30 miles to the south of that site. At Pulicat scarcely a vestige is to be found of the Dutch of the olden time, beyond a quaint burying ground, a street lined with trees, a few Dutch houses, and a few heavy masses of half buried brick work, which serve to show where the Fort once stood. But at Sadras the destruction has been but partial, and the hand of time has dealt lightly with the ruins. The watch towers and staircases, the Governor's house and the officers' quarters, the barracks, the cells for prisoners, the magazines, the store rooms, the ramparts,—all are still there, showing the heavy brick work, and neatness and primness of style, for which the Dutch were so celebrated.

The Dutch began to trade in Bengal as early as the commencement of the seventeenth century; they were always the first in opulence and importance, till the English became the rulers of the country.

The Dutch established themselves at Chinsurah in 1675. So long as they adhered to a steady prosecution of commerce, they were uniformly prosperous and successful. But at last they got tired of calculations and counting house drudgery; power and politics became their hobby, and they hoped for another Plassey affair for themselves.

The Nawab Meer Jaffier, who owed the enjoyment of his master's throne to the English, became anxious to throw off their yoke, and encouraged the Dutch to import troops, and to attempt the establishment of a counter influence in Bengal. A large fleet arrived from Batavia, consisting of seven ships, three of thirty-six guns, three of twenty-six and one of sixteen, with 1100 troops, European and Malay. It

was given out that the armament was intended for the Dutch settlements on the Coromandel Coast, but had been obliged to run up the Hooghly. It was impossible for a man of Clive's penetration to mistake its object. He was not ignorant of the feeling or the intrigues of the Nawab. The Dutch had hitherto confined themselves strictly to mercantile undertakings. It was clear to the mind of Clive that their object was to take advantage of the breaking up of the Mahomedan power, and endeavour to supplant the English in Bengal. Although he had no such absolute proof of these designs as to justify him in the bold measure he determined to pursue, yet we, at this time of day, have the clearest evidence of the fact, in the journal of one of their own officers, Stavorinus.

The two nations were at peace, and Clive clearly had no right to prevent the progress of Dutch ships and Dutch troops to their own settlement. But he did not fail to perceive that the presence of a large foreign force, in the vicinity of Calcutta, composed in a great measure of European soldiers, and commanded by European officers, would not fail to disturb the dependence of the Nawab on the English, and kindle hopes of ambition which would have been to him a source of great embarrassment. He determined to defeat the projects of the Dutch at the risk of his own commission. He was accustomed to affirm that an Indian Governor must always act with a halter about his neck, and in this instance, he exemplified his own assertion.

During a period of profound peace, he captured the Dutch vessels proceeding up the river, and sent Col. Forde to attack the Dutch army, and prevent its reaching Chinsurah. Forde, who seemed to feel the halter already chafing his neck, demanded the Governor's written authority for an act so inconsistent with the law of nations. Clive, to whom the note of demand was addressed, received it when playing at cards. Without quitting the table he wrote an answer in pencil—"Dear Forde, fight them immediately. I will send you the order of council to-morrow." Forde met and discomfited the Dutch, and Dutch ambition was quenched by the daring genius of Clive, as that of the French had previously been.

Of the origin of Chinsurah we have been able to obtain no account, but one of the escutcheons in the church refers to a Governor who died in 1665. Fort Gustavus, before it was entirely demolished, bore the date of 1681 on its northern, and 1692 on its southern gate. It must therefore have been a century and a half old when it was

levelled with the ground. The beams of this edifice, which were of the largest scantling and equal in size to two of our modern beams, were found to be as sound as the day they were inserted into the building. They were of Java teak, and had been sent up from Batavia. The garden of Government House was tastefully laid out, and adorned with statuary. The statues have long since disappeared, and the walk in the alley of trees, is now trod only by British soldiers.

The settlement of Chinsurah was subordinate to that of Batavia, and all vacancies were filled up by the public authorities of that place, the local council being permitted only to nominate to officiating appointments. The Government consisted of a Governor or Director, and seven members of council, five of whom had a right to vote, as well as to advise, while two had no other privilege than that of advising. The chief though only the head of a commercial factory maintained no little state. He was the only person in the settlement who enjoyed the privilege of being carried "in a palankeen, sitting on a chair"—this kind of vehicle is now completely extinct. When he rode through the town, the natives were obliged in some places to play on their instruments of music. He was preceded by *chobdars*, or attendants armed with a staff entirely covered with silver, while the inferior members of council were allowed chobdars with only half mounted staves.

We obtain an interesting view of the state of the Dutch factory of Chinsurah, and the footing on which it stood in reference to the English Government of Bengal, as well as of the manners of the times, from Stavorinus' narrative of the official visit paid by the Dutch Director to the English President in 1770. The visit described was intended as a compliment to Mr. Cartier, who had just assumed the Government of Calcutta. The Dutch Director embarked at four o'clock in the afternoon at Chinsurah in company with eight persons. The garrison was drawn up on the occasion in two lines, and a detachment, consisting of an officer and twenty-four privates, accompanied the Director, to serve as his body-guard. He embarked in the "Company's great budgerow," in the large room of which thirty-six people could sit down to table. A salute of twenty-one guns announced his departure from his own settlement. Each individual in his suite had his own private budgerow; there were also two vessels used as kitchens, or cook boats, and two as "store-ships," to carry the provisions, for this long voyage from Chinsurah to Calcutta, besides those in which the body guard was embarked. The whole fleet consisted of no fewer than

thirty-three vessels. It reached Chitpore at seven the next morning, where the party awaited the arrival of the deputation sent from the English Government to receive the Director, and which consisted of Mr. Russel, the second in command, and several other functionaries.

On his arrival, the Dutch gentlemen went on shore, and after breakfasting at his garden house, proceeded to town in five carriages sent by the Governor, and at ten o'clock alighted at the house prepared for their reception. It stood next to the old Government House, and contained many roomy apartments, was hung with damask silk, and fitted up in the European style. In the area before the house stood a company of eighty sepoys, commanded by a European officer, and they continued to act as a guard of honor as long as the Dutch Director continued in the settlement. As soon as Mr. Cartier heard of his arrival, he proceeded to pay his respects, accompanied by all the members of council. The Director said that the object of his visit was to congratulate the Governor on his appointment, and added, as "a particular compliment, that he hoped Mr. Cartier would so well manage matters as to be able to return to Europe in a few years; to which that gentleman replied with a smile." This visit of ceremonies lasted an hour. The Governor and council then departed to return the visit, and remained three quarters of an hour. *At half past twelve* he again went to Government House to dinner, where he found a table of sixty or seventy covers laid out in a large and airy saloon. Half the guests consisted of military officers, for whom we are told, the Government kept open house every day. When the cloth was removed, a hookah was placed *on the table* before each one of the company, which they smoked for half an hour: they then rose from table and retired to their respective dwellings.

At six in the evening, Mr. Cartier waited on the Dutch Director and conducted him to his country seat at Belvidere, about two Dutch miles from Calcutta, where he was entertained with an excellent concert performed by amateurs, and an elegant supper. At midnight he returned to his residence in town. The next morning at nine, Mr. Cartier again waited on him with an invitation to a grand ball, which was to be given that evening at the Court House. The ball was opened by Mrs. Cartier and the Dutch Director. The company was very numerous, and "all were magnificently attired, especially the ladies, who were decked with a profusion of jewels." A collation was served in an adjoining room, and the assembly did not break up before the following morning.

The next afternoon, at half past three, the Dutch Director took his leave of the Governor of Calcutta, and returned with his suite to the fleet at Chitpore in the Governor's coaches, accompanied by the same gentlemen who had been deputed to welcome him, and escorted by six of the Governor's life guards. The Director was saluted on his departure from Calcutta, as he had been on his arrival, with nineteen guns from the ramparts of Fort William. The visit cost him a thousand rupees in *buxis*, or vails to the Governor's servants. The fleet weighed anchor with the flood tide, and reached Giretty early the next morning, where the party were received by Mr. Chevalier and breakfasted with him. At nine o'clock—the breakfast in those days of formality and etiquette seems to have been rather early—they rode from Giretty to Chandernagore, and after paying some visits, proceeded to Chinsurah, where all the members of council were in attendance to honor the return of their chief, and a salute of twenty-one guns was fired from Fort Gustavus.

The Fort from which these salutes were fired has ceased to exist. The Dutch finding their settlements in India, a mere burden on their finances, after they had ceased to be valuable as factories, very wisely resolved to dispose of them, and the British Government was not displeased with an opportunity of being relieved from the extravagant and profligate expenditure incurred by their servants on the island of Sumatra. An exchange accordingly took place in 1805, the Dutch were left in undivided possession of the island, and the English received Malacca and Chinsurah, together with the subordinate factories, in lieu of Fort Marlborough and its costly dependencies. The old Fort and Government House at Chinsurah were soon after demolished, to make room for a splendid range of barracks capable of accommodating a thousand men, and no token remains to tell that the settlement once belonged to the Dutch, but the escutcheons of the Governors which still continue to adorn the walls of the church.

We know of no place in India so redolent of old Dutch life in India, as Sadras. There the pilgrim may wander, not only through the old Fort; but through the Governor's official residence, now a traveller's bungalow, and above all, through the ruins of Myhn Heer's magnificent garden house; and at last he will almost fancy that the great merchant princes of the seventeenth century have but just vanished away, with their huge pipes, their fiery schnaps, and their stately vrows. The following extracts from some notes taken on the spot about 1862 by a writer in the *Calcutta Review* may not be without interest:—

"The Fort at Sadras must have been a very imposing place a century and a half ago; and enough of the fortifications are still standing, to show the great strength of the masonry, as well as the arrangement and plan of the place. The visitor can still walk along the elevated terraces, and examine the magazines, the store rooms, the treasury, the barracks, and the terrible dungeons. He may still enter the residence of the commandant, and even ascend to the watch towers and guard rooms. But there, in a spot once an arena of constant business and bustle, all is silent and desolate. The purple convolvulus luxuriates amongst the ruins, and nothing is heard but the solemn roar of the waves, which dash upon the sandy beach, unchanging and unchangeable.

"A hundred yards inland from the Fort stands what was once the town house or official residence of the Dutch Governor. It consists of one ample hall, with rooms on either side, and a long spacious verandah in front. This building is also interesting to the visitor, inasmuch as at present it forms the traveller's bungalow. The most curious feature connected with this building is the quaint old garden. An English garden in India disappears entirely in a few years, if no attention is paid to the cultivation; but though nearly a century has passed away since this Dutch garden was left to itself, the ruins still remain. Every fancifully cut bed, and straight prim path, was lined with brick covered with white chunam; and to this day the lines still remain to indicate the beds and pathways of olden time. There too are the solid seats, the massive walls, the neat tank with little channels for watering the beds, and the luxuriant remains of trees and flowers which still struggle against the thick overgrowth of prickly pear.

"But this town house and grave looking garden are dwarfed into insignificance by the side of the magnificent garden house, which once rose in stately grandeur nearly half a mile inland, and where the Dutchmen of old displayed their taste for flowers and canals to their heart's content. There, was once the Dutchman's beau ideal of luxury and retired dignity. A quaint but splendid edifice, strong as a castle, but rendered light and elegant by its graceful towers, elevated terraces, and curious arches. The gardens spreading over four acres were all cut up into straight walks, mathematical beds, and endless water channels. Trees and flowers all were luxuriant but trim; and the deep waters of the lake-like tanks, were as solemn and imperturbable as a Dutch canal. In a word, all the wonders of a residence at the Hague were reproduced in that sandy plain. The indica-

tions of the past are still so fresh, that the imagination easily calls up a picture of the days that have been. The walks once more alive with young Dutch traders, solemn as judges, and with fair young vrows, stately, prim and blooming as the precisely cut beds of flowers. From yonder tower a starched lady in ruffles may have been looking down upon the yellow lotus flowers in that deep lake; or watching the Governor and Council sitting in that small embowered island, with the eternal schnaps and coffee and stupendous pipe. All is intensely Dutch, and yet here and there gildes a mild Hindoo, or a jewelled and bangled ayah. But all is a dream of the past. Silence and desolation are the only denizens now; and nature alone luxuriates amongst the ruins."

Although drunkenness, duelling, gambling, and licentiousness were only too common, the strictest rules were laid down for preserving sobriety and morality. Sir William Langhorne in 1678 issued express orders,—and certainly his views were liberal—that no person was to be allowed to drink above half a pint of arrack or brandy and one quart of wine at a time, under a penalty of one pagoda upon the house-keeper that supplied it, and 12 fanams (about a rupee) upon every guest that had exceeded that modest allowance. Drunkenness was to be punished by a fine or the stocks. All persons addicted in any way to licentiousness were to be imprisoned at the discretion of the Governor, and if not reclaimed were to be sent back to England. All persons telling a lie, or absenting themselves from morning or evening prayers, were to be fined four fanams for each offence. Persons being out of the Fort after eight o'clock in the evening were to be punished; and any one committing the heinous offence of getting over the walls of the Fort upon any pretence whatever, was to be kept in irons until the arrival of the ships, and then to be sent to England, there to receive further punishment. It was also ordained that all persons swearing, cursing or blaspheming the sacred name of Almighty God should pay a fine of four fanams for each offence; that any two persons, who should go out into the field to decide a quarrel between them by the sword or fire arms, should be imprisoned for two months on nothing but rice and water; that any soldier giving another the lie should be made fast to a gun, and then receive ten small blows with a rattan, well laid on by the man to whom he had given the lie; and that any officer who should in any way connive at the offence, or at any mitigation of the punishment, should forfeit a month's wages.

CHAPTER V.

THE CIVIL SERVICE.

[Several notices of the Civil Service will be found under the heading "Official," (chapter X., volume I.) hence the brevity of the present chapter.]

UNDER the idea that the attainment of the Persian language was impossible in Calcutta and its neighbourhood, the Court directed, in 1757, that "five young gentlemen, covenanted for our establishment," should be sent, "by the first ships bound to Bombay, to reside at Bussora, and to send annually two others upon the same footing," to "study the Persian tongue and nothing else, to rise in the service as our other servants do, receiving such allowance and salary during their stay as you may judge fit, and when qualified to be of use, to come to Bengal and take their standing according to their rank in the service; which we esteem to be the most effectual method of getting Europeans perfected in the pure genuine Persian speech and literature, and we dare say will be attended with many future advantages to the Company's affairs."

The young writer came out at the age of fifteen or sixteen, and immediately engaged a *banian,* who in general became his master, and retained his influence as long as his employer remained in India. The object of this engagement was to obtain pecuniary assistance in that career of private trade on which the civilian embarked before he had been a twelvemonth in the country. The banian advanced the money, and of course took the lion's share of the profits. But this was not all. Every Company's servant, down to the junior writer, was entitled to a *dustuck* for his private trade. The *dustuck* was a passport for trade, issued under the broad Persian perwannah or seal of office, signed by the President, and countersigned by the Secretary to the Council, by virtue of which the goods covered by it passed "clear of duties, let, hindrance or obstructions from the Government guards." These dustucks became the most prolific source of disputes with the native government, and repeatedly constrained the President to pay down two or three lakhs of rupees to pacify the Nawab.

It was to obtain the benefit of this dustuck for his own private and clandestine trade, and thereby to evade the payment of duties on his adventures, that the banian attached himself to the writer. The trade protected by these dustucks was invariably entered in the master's name though carried on with the capital of his banian; and thus it often appeared on the public register that civilians, who were known not to be worth five pounds, were possessed of a trade of two lakhs of rupees a year. The terms of this illicit compact between the civilian and the banian, varied with circumstances; the former obtained an eighth, a fourth, and sometimes even a moiety of the profits; that is, of the profits which the banian was good enough to admit. The whole body of the service was implicated from the President downwards, more or less, in these underhand dealings, and though the Directors, between 1702 and 1756, sent the most peremptory orders against the custom, and the punishment of those engaged in it, there was none in a position to cast the first stone at his neighbour. The civilian continued to live by his trade and his dustucks.

The "turbulent, factious conduct of the young men of the Civil Service in Calcutta," had become so alarming, that it attracted the notice of the Honorable the Court of Directors, who wrote out in March 1767, that they were "determined to quell it, and if they (the young civilians) cannot be brought to a sense of their duty, they are unworthy of our service, and must not be suffered to continue in India. There is something so subversive of all order and good government in such young men making themselves judges of the conduct of their superiors, and their combination to insult them is of so atrocious a nature, so hurtful of our government in the eyes of the natives; and should the same factious spirit spread itself to the Army, the consequences to be apprehended so fatal, that we think the existence of the Company almost depends on your exerting your authority on this occasion."

Instances having frequently occurred of Civil Servants of the Company omitting to supply, in a regular manner with the order published on the 22nd November 1786, which required that, in future, all servants of the Company employed in the Revenue and Commercial Departments should resign their offices previous to their applications for leave to return to Europe, and transmit, at the same time, a certificate from the department under which they acted that they have settled accounts; the Government further notified, under date the 21st January 1787, still more stringent regu-

lations on the subject; and the Secretary to Government was directed "to be particularly careful that the above regulations have been strictly complied with, before any orders issue from his office that shall grant to any Company's servant permission to go to Europe and assign to him accommodation in the Company's ships."

[Adv.]—"WANTS A WIFE.—A young man of genteel connexions and pleasing appearance, being desirous of providing himself with an amiable partner and agreeable companion for life, takes this opportunity to solicit the fair hand of a young and beautiful lady. Personal accomplishments are absolutely necessary, though fortune will be no object, as he is on the point of taking a long and solitary journey to a distant and remote part of the country, and is anxiously solicitous to obtain a partner of his pleasures and a soother of his woes. A line addressed to Mr. Atall, No. 100 Writers' Buildings, will meet with every possible attention, and the greatest secrecy will not only be observed, but Mr. Atall will have the pleasure of giving due encouragement to their favor. Calcutta, 21st November 1808." This looks very much like the production of some wag or wags then under instruction in the College in the Writers' Buildings.

The following is an extract from the proceedings of the Governor General in Council, in the Public Department, on the 10th September 1790:—"Resolved, that with a view to encourage the acquisition of the native languages, such of the Honorable Company's writers as are so disposed, be allowed, during the period of their writership, the sum of sicca rupees 30 per month for a master to teach them; but that the first bill for this allowance (which is to be drawn with their office salary) be not paid until it shall have been signed by the Governor General, agreeably to the established practice.

"Ordered, that it be notified to the Honorable Company's writers, that the Governor General will not be inattentive to the progress which they make in acquiring the country languages, and that it is the intention of Government to withdraw the allowance for a master from those who, on an examination by such persons as the Governor General may think proper to appoint, from time to time for this purpose, shall be found not to have made a reasonable proficiency therein.

"The Board adverting to the regulations passed in the Secret Department of Inspection on the 27th June 1785, and published in the *Gazette* on the 30th of the same month, whereby, it was resolved that the Honorable Company's writers should be allowed to draw (independently of their

salary) sicca rupees one hundred per month, and that they should be accommodated with apartments in the Writers' Buildings until their personal allowances (including the above 100 rupees) should exceed Rs. 400 per month.

"Resolved, that the above mentioned allowance of Rs. 100 per month be abolished, and that the title to apartments in the buildings shall cease to every writer, as well as to every other civil servant of whatever rank, whose personal allowances shall exceed the sum of Sicca Rupees 300 per month. It is to be observed that the allowance of Sicca Rupees 30 per month for a master to teach the country languages is not to be considered as a personal allowance."

We are informed by an intelligent traveller (Dr. Ives), who visited India in 1754, being Staff Surgeon with Admiral Watson's fleet, that superfluities or luxuries were forbidden by the Indian Government to their young servants. Palankeens, and even the use of a chattah, were prohibited by the authorities. A young fellow of humor, on the order against *roundels* or *chattas* coming out, altered the form of his umbrella from a round to a square.

Hugh Boyd records in the *Indian Observer* (1793) that "in times of yore our honorable masters were very attentive to correct any appearance of extravagance in their young servants. Hearing that laced clothes were very much in fashion in Fort square, a sumptuary regulation was sent out against them. But a young gentleman, who could not entirely divest himself of his favorite habits, still sported a gold *edging* on his coat, and defended it against the graver powers by maintaining, that though *lace* was prohibited, the order was not binding." What would a young civilian of the present day think if an order were to be issued against top-boots, or any other article of dress. Or a young ensign if the yearly number of his kid gloves and patent leather boots was to be regulated in general orders. The condition of both the civilian and the military adventurer has altered for the better since those days, as well in regard to pay as in morality.

The Court of Directors had occasion, in a despatch of the 22nd May 1811, to call the attention of the Bengal Government to the fact of the young writers in the College of Fort William incurring debts while under tuition—"where their allowances," says the despatch, "are sufficiently ample to provide all their reasonable wants, and where the time of our servants should be employed in qualifying themselves to discharge the active duties of the service for which they ought to be employed in preparing themselves, and not

wasted in expensive indulgences, incompatible with their situation and duty. We must therefore call your particular attention to this subject, and with a view in future to put an entire stop to a practice so ruinous to the individual engaged in it, as injurious to the Company's service, we direct that it be promulgated and fully acted upon, that no writer, who has contracted debts which he is unable to discharge, shall be eligible to fill any situation of trust and responsibility; for it is self-evident that a young man entering into public employ, embarrassed in his circumstances and indebted perhaps to a native in a considerable sum of money, cannot be equally independent with him who commences his career in life free from such incumbrances."

In 1853 admission to the Indian civil service was thrown open to all who, being natural-born subjects of the Queen, should offer themselves as candidates for examination and admission. The unnecessarily protracted period which was allowed for study to every young civilian before he presented himself for the examination which was to test his fitness for entering on active duties, was curtailed. The College of Fort William, which was established by the wisdom of Lord Wellesley, was abolished; and a board of examiners for conducting examinations, and for superintending the studies of young civilians, created in its stead. In 1853 admission to the medical service was thrown open to competition by all classes, European as well as native.

Until 1853 the local government of Bengal had been placed in the hands of the Governor General of India; but now that officer was liberated from the obligation of performing an impossible task of controlling the government of *all India;* and a Lieutenant Governor was appointed to the charge of Bengal alone.

At the same time, another great change was introduced, equally novel in its character and not less important. A council was appointed as the Legislature of India, which was no longer identical with the Supreme Council, but included divers other members, and exercised its functions by separate and distinct proceedings of its own.

CHAPTER VI.

INDIAN NAVY.

THE Bombay Marine or Indian Navy is the oldest branch of the East India Company's service in India. It was created for the suppression of piracy on the coast of Malabar, at a time when the pirates threatened every merchant vessel that appeared on the coast, and even had the audacity to attack vessels in the Bombay harbor. As the British power extended, piracy on a large scale gradually ceased on the western side of India; but it ceased there to reappear with renewed vigor in the Gulf of Persia. Various acts of piracy having been committed on our trading vessels, the British flag insulted, its officers beaten, and its vessels of war attacked, the Government of India, after incurring an enormous expense in fitting out two expeditions for the destruction of the strongholds of these marauders, found that the only method of keeping them in subjection was to maintain a strong force in the Gulf, and this has ever since continued to be the principal duty of the Indian Navy.

The Indian Navy grew by slow degrees, as the necessity for defending the rich merchantmen of the old Company became greater and greater. Soon after the establishment of factories at Surat, Ahmedabad, Cambay, and Gogo, a local force was formed at Surat, with the common-place title of "grabs and gallivats," vessels varying in size from 50 to 300 tons. This was in 1613, and it was from this nucleus that afterwards the Bombay Marine was formed, and ultimately the Indian Navy itself. In the 17th century the Portuguese shared, with native and European pirates, the attention of those staunch little vessels, and many a tough fight took place in the Indian Ocean, and in the rivers and creeks of the adjoining coasts. Piracy was rampant in the Indian seas; the notorious Captain Kidd and his crew in the *Adventure* enriching themselves by plundering the ships of all nations with praiseworthy impartiality. Thus the fighting ships of the Company grew in size and number as their commerce extended, and the history of the various factories, which of course were, in the first place, established on the

sea-board, is full of stories of the prowess of the seamen who fought on land and at sea with the same resolute courage, and fought too with general success.

In 1716, we are told by Lieutenant Low in his lately published work on the Indian Navy, from which we have obtained much information—"The cost of the Marine was £51,700; and it consisted of one ship of 32 guns, four grab-ships, mounting between 20 and 28 guns, and twenty grabs and gallivats, carrying between 5 and 12 guns."

In 1754 a dry dock was built in Bombay, and soon afterwards a dockyard was formed, the head builder being a Parsee, Manockjee Lowjee, whose work and that of his nephew, Jamsetjee Bomanjee, was so well done that their ships were held to be equal, if not superior, to those built in Europe. They were the first to discover the qualities of teak wood, and the frigates and line-of-battle ships built by them for the English Navy were said to have been remarkable for their strength and seaworthy qualities. Towards the close of the century some important surveys were made by the Marine, but the French Revolution soon dissipated peace in the East; and in 1798 the Company re-organized their Service.

Passing over the dark period of the history of the Marine, we shall treat at once of its constitution and strength at the commencement of the Burmese war in 1824. It then numbered fifteen vessels, ranging from 517 to 160 tons, and with armaments of from 24 to 2 guns.

At the commencement of the Burmese war several of the vessels belonging to the Marine were sent to join the fleet, and acted in concert with it against the enemy. At this time, if we are to believe Captain Marryatt, the vessels were by no means effective fighting vessels, carrying guns above what they should, and being manned by crews, of which only a small proportion were Europeans. During the war the officers showed much gallantry and did good service with the limited means at their disposal.

A new and more fortunate era dawned on the Marine towards the close of the administration of the Hon'ble Mountstuart Elphinstone, who throughout the whole period of his government took a warm interest in the advancement of the service.

In June 1828, Sir Charles Malcolm, a Captain in His Majesty's Navy of thirty years standing, arrived in Bombay to fill the appointment of Superintendent; and in the following year His Majesty was pleased to extend martial law to

the service, and to order that the officers should rank with those of the Royal Navy.

The Bombay Marine changed its name on the 1st May 1830 to that of the Indian Navy, and at this period of its history it had many difficulties to meet. It was very nearly reduced to a mere packet service, the commercial element in the Company looking upon its maintenance as a war fleet as a useless expenditure; but better times were in store, and under Captain (afterwards Sir Robert) Oliver, it revived its old fighting traditions in the Persian Gulf and on the Indus.

In 1836 the Indian Navy consisted of fifteen vessels, of which one was a steamer (the *Hugh Lindsay*), their tonnage ranging from 567 to 50 tons, and their armament ranging from sixteen 32 prs. to two 4 prs. All these vessels with one or two exceptions had been built since 1823, and were a fine class of vessels, built of teak, and copper-fastened, and on the latest models.

The number of officers belonging to the Indian Navy, was not much greater in 1854 than it was 18 years before, though the number of vessels had increased ten-fold. In 1835, there were twenty-one vessels in all, of which only one was a steamer; the tonnage of the whole being barely 4,500 tons; whilst in 1854, the tonnage amounted to about 35,000 tons, and the number of vessels forty-seven, of which twenty-four were steamers, requiring not only a greater number of officers, but a larger amount of stores. With all this increase the officers were worse off than in those days; their work heavier and their prospects less promising; and notwithstanding that officers had been taken from the merchant service, still they were not sufficient to render the vessels of the Indian Navy efficient.

If the Indian Navy has gained but few laurels in chasing the pirates from the western shores of India, or in its engagements with an European enemy, this must be attributed to the smallness of the craft and their miserably deficient armaments. To the surveying department however, the officers of this service may justly refer with pride, and point to the noble works of Captains Ross, Elwon, Moresby, Brucks, Cogan and many others. It would be superfluous to dwell on the merits of Captain Ross' surveys of the coast of various countries to the eastward—on his great work, the survey of the China seas;—or on the survey of the Gulf of Persia by Captains Brucks, Cogan and Rogers; the Red Sea by Captains Elwon and Moresby; and Socotra by Commander Haines; for their labors are known to the world and their merits have been duly appreciated. The survey of the

Maldive Islands by Captain Moresby; of the Southern coast of Arabia by Captain Haines; of the Indus by Lieutenant Carless. And several other important works might also be mentioned as reflecting credit and lustre on the members of the Indian Navy.

Captain Horsburgh, whose admirable "Book of Directions" and numerous accompanying charts, form the completest body of hydrographical and nautical knowledge that has ever appeared, was for many years Hydrographer to the East India Company, and had contributed more by his writings and his original charts to the cause of Eastern navigation, than all the other writers and voyagers in the same seas put together.

CHAPTER VII.

INDO-BRITONS.

East Indians or Eurasians as a class were in the early days of the Company's rule in India in a peculiar position; they were looked down upon by Europeans, who called them half-castes and other opprobrious names. Captain Williamson in 1800 opposed their admission to offices of authority and trust, on the ground that "their admission could not fail to lessen that respect and deference which ought most studiously to be exacted on every occasion from the natives of rank."

The Europeans of that time were apprehensive that the East Indians would mutiny and join the natives. Lord Valentia writes in his time of the fear entertained of the East Indians, lest they "should become politically powerful and be beyond control. They were in Calcutta clerks in every mercantile house, though not permitted to hold office under the East India Company." Lord Valentia was in great alarm lest they should follow the example of the Spanish Americans, and of St. Domingo. He recommended that a law should be passed requiring "every East Indian father to send his children to England, whence they should not be allowed to return, in any capacity."

The following curious announcement is found in the *Gazette* of the 31st May 1792—"At a Court of Directors, held on Tuesday, the 19th April 1791—Resolved unanimously, that no person the son of a native Indian, shall henceforward be appointed by this court to employment in the civil, military, or marine service of the Company." And this prohibition was in the following November extended to sworn officers of the Company's ships, between Europe and India.

"It having been represented to the Governor in Council," says an order, dated Fort St. George, 30th November 1827,—"that the class of persons designated country-born in the general orders of the 13th of March last, prefer the designation of Indo-Briton, the Governor in Council is pleased to direct that they shall in future be distinguished by that term in all public documents in which there may be occasion

to mention them." In consequence of this order we have headed our chapter accordingly.

In 1821, a pamphlet entitled "Thoughts how to better the condition of Indo-Britons" by a "Practical Reformer," was written to remove the prejudices existing in the minds of youth born in the country, against engaging in trades. This was followed up by another pamphlet, entitled "An Appeal on behalf of Indo-Britons."

After these publications there was a lull, with the exception of occasional letters in the public prints, until June 1824, when a deputation of the Managers of the Calcutta Grammar School waited upon the Lord Bishop of Calcutta, and requested his patronage of "a school of trade" which it was contemplated to establish.

A public meeting was held at the Town Hall on the 16th February 1825, when it was determined to establish a society for training up Christian youth to useful trades and occupations under the appellation of "The Calcutta Apprenticing Society." The object of the society was to obtain funds from the public for "placing out Christian youth, of every denomination, in need of support from this society, with respectable persons, engaged in useful trades and occupations, who may be willing to take them as apprentices for a limited term of years." The scheme took with the public. Mr. Henderson of the Bank of Bengal, undertook the duties of secretary gratuitously; subscriptions to the amount of Rs. 21,000 were speedily collected; and a house of reception was obtained, whence tradesmen could take those lads who were found to be industrious.

The second annual report of the Apprenticing Society (published in 1827) showed that the apprenticing of boys to trades had failed, as might have been expected, but their marine school seemed to be likely to answer. The Calcutta Apprenticing Society had a vessel on the river, which was used as a marine school in which the lads were taught seamanship. This vessel was in so bad a state in 1828, that it was sold for Rs. 4000. The younger boys were sent to the orphan and free schools, and the elder ones were provided for on board the pilot and other vessels of the port.

In 1829 the prospectus of the East Indian Association was issued. The chief object of the Association was, "to inquire into and ascertain the state and circumstances of East Indians; to endeavour, by all lawful means, to remove the grievances under which they labour, and to promote their intellectual, moral, and political improvement. This will

necessarily open a wide field for research and investigation; and it cannot, therefore, be doubted, that the advantages of an Association established for such purposes are sufficiently manifest in the useful and comprehensive nature of its intended operations. Every subject of importance, connected with the well-being of the East Indians as a body, will undergo full discussion, by which means every important measure having been thoroughly examined, the difficulties which may exist, and the most suitable means of removing them will be made apparent; and the whole strength of the Association will be put forth to obtain for them the possession of those rights and immunities of which they are now destitute. As it is in contemplation to publish the results of those discussions, much information on theoretical and practical subjects will be diffused,—an expedient which will cause many existing and injurious prejudices to vanish, and prepare the way for the adoption and execution of plans now little known, or unjustly depreciated."

An effort was made at Madras, by the establishment of an "Apprenticing Society," to give the children of Eurasian parents a mechanical education, so that they might pursue trades in preference to the quill. The result was, says the first report of the society (1826) favorable, though there was much opposition shown by parents, to their children being put out to mechanical trades in preference to the usual situations of clerks in offices.

Some of their grievances may be thus epitomised. Eurasians in the mofussil were not brought within the jurisdiction of the civil law. They were excluded from the principal offices in the Civil, Military and Marine services of the East India Company. They were treated as ineligible to many subordinate offices open to other natives of the country. They were declared disqualified from holding His Majesty's commission. The nominally independent powers of India were debarred from accepting of their services. In fact, they experienced none of that fostering care which had been extended by the government to other classes of natives. All these glaring disabilities had been repeatedly represented to the government of the East India Company with a view to their abolition, but without success; till it was resolved to form an East Indian Committee, and to depute one of their body to England with a petition to the British Parliament for the redress of their grievances. Accordingly Mr. John William Ricketts, the first noble pioneer in the Eurasian cause, volunteered to proceed to England. His mission was successful, and on his return to India, by way of

Madras, he received quite an ovation from his countrymen in that presidency; and was afterwards warmly welcomed in Calcutta, where a report of his mission was read at a public meeting held in the Calcutta Town Hall in March 1831. The result of the petition was the enactment of juster laws, and gradual removal of the disabilities which had weighed on Eurasians so heavily. Since then, thanks to beneficent legislation and the spread of more enlightened ideas, individual members of the Eurasian class are now to be found in nearly all departments of Government, from which they were once jealously excluded. Not a few have eminently distinguished themselves in the various walks of life, witness Sir Richard Francis Morgan, Chief Justice of Ceylon, Sir George W. Kellner and others.

CHAPTER VIII.

MUTINIES IN THE INDIAN ARMY.

EUROPEAN MUTINIES.

To those who think a mutiny of Europeans in India chimerical, we may notice that of a handful of men who seized the castle and island of Bombay in 1683, then our only possession, and kept it against the Company for two years though still professing allegiance to the King; the mutiny of French troops, under D'Auteuil, in 1749, which changed Dupleix's triumph into terror and consternation, and nearly nipped in the bud the grand design of bringing all India under the rule of France; the mutiny of the European part of the Bengal Army under Clive, in the face of an enemy, in 1766; that of the Madras Army in 1776 (in which the Commander-in-Chief took part,) which deposed and imprisoned Lord Pigott; the all but mutiny of the Bengal officers in 1795-6; and that of a large portion of those at Madras against Sir G. Barlow in 1809. These were only partial mutinies, and in circumstances particularly unfavorable to the malcontents; yet in all of them a little less firmness or a little less moderation and concession on the part of the Government, would have led to a contest that might have proved fatal to our Indian empire.

The formidable mutiny which was discovered in September 1766, among the officers of the whole European Army alluded to above, we shall notice more in detail. During Lord Clive's residence at Moorshedabad, "the alarming advices arrived that almost all the officers of the army had combined, under articles of the most solemn agreement, to resign their commissions by a certain day unless their batta was restored and the orders of the Company were abrogated. To secure their measures without incurring the penalties of desertion, they fixed on a period when they had no pay in advance, and it was every moment expected our frontier would be invaded by a large body of Mahratta horse; flattering themselves that the necessity for their services at so critical a juncture must infallibly reduce the Board to submission." But they were mistaken. "It was immediately

recommended by Lord Clive to the Board, when he transmitted the advices, rather to put all to the risk than suffer the authority of the Council to be insulted. The saving to the Company from the reduction of batta was now of trifling consideration, when compared with the danger of yielding to the menaces of so unprecedented and mutinous an association. To preserve the authority of the President and Council, and crush an attempt that indicated the total subversion of government, became now the object; in which sentiments the whole Board with one voice concurred with His Lordship. He proceeded, accompanied by General Carnac, to Monghyr, where the first brigade lay in cantonment, and happily arrived at the instant when the whole body of Europeans was ripe for revolt. Their officers, (the Lieutenant Colonel, and two or three subalterns excepted,) had to a man withdrawn themselves, and the soldiers, fired with the contagious spirit of mutiny, were on the point of following the example of their superiors, when His Lordship's presence and authority awakened them to a sense of their duty, and probably saved these provinces from all the horrors of rapine, desolation and military anarchy. The same violence of conduct prevailed amongst the officers of the 2nd and 3rd Brigades stationed at Allahabad and Patna, insomuch that Colonel Smith, who was posted on the frontier of Korah, remote from all assistance, and in the very face a formidable enemy, was totally deserted by his officers in those lines he had drawn to oppose the irruption of the Mahrattas." Mr. Long in his "Selections," from which we have taken the above, does not give us the sequel to this alarming mutiny.

A mutiny of a serious nature seems to have occurred in the regiment of European Artillery stationed at the Mount, Madras, on the 15th and 16th January 1798. We have failed in procuring any detail of it, but have only an account of the execution of the ringleaders in the mutiny, which took place at the Mount on the 15th March, which was after all the parties concerned had been tried by court martial. The prisoners Clarke, Stumbles, Banks, Forster, Lawrence and Connor were sentenced to death; the first three to be hanged in chains. Forster to be blown away from a gun, and Lawrence and Connor to be shot. When the first four had been disposed of, and the execution party were prepared to carry out the sentence on the two remaining prisoners, Lawrence and Connor, who had been viewing the fate of the others, Major General Brathwaite went up to them and announced the Commander-in-Chief's pardon. Lawrence fell senseless on the ground, Connor, after a moment's pause, dropped on his knees, and offered up thanks in a loud and serious manner.

In an order dated Choultry Plain, 15th March, the Commander in Chief dwelt upon the destructive consequences of an offence which is the most flagitious that can brand the character of a soldier. He ordered that the two pardoned men should be struck off the rolls of the Artillery, and sent out of the country.

NATIVE MUTINIES.

Casual readers of the military history of India often fancy that the mutiny of 1857 was unprecedented. That it was so in magnitude is happily true; but other insurrections, refusals to obey legitimate authority; and attempts to subvert the power of the military commanders, had happened at various times and in various parts of both the Madras and the Bengal presidencies.

One of the regiments of the Royal service employed in India at this time (1763) was the 89th Foot. Its time being up, it was about to proceed to England, when news reached Bombay, where it was stationed, that Major Adams had died, that the forces of the Great Mogul were invading Behar, and that the Council of Fort William needed the services of Major Hector Munro, with all the troops that could be spared. Munro immediately hastened round to Calcutta, assumed the post of Commander-in-Chief, and proceeded to take the field.

On the 3rd August 1764 a scheme was discovered for a rising of the sepoy troops at Patna and Monghyr; this was carried into effect on the 7th and 8th, a large number of the men taking their officers prisoners and walking off with their arms. The cause of the disaffection was, that they had not received the same amount of prize money which had been accorded to other battalions. After much difficulty the men were brought back to their allegiance.

This epoch is one of so much interest in the history of the Bengal army, and it at the same time offers so many more proofs of the mutinous disposition upon which Captain Turner Macan and Sir Edward Paget commented before the House of Commons, that we must take from Captain Broome's book the following quotation :—

"A mutinous spirit once engendered in an army is only to be suppressed by a strong hand and the unflinching exhibition of a marked example. The orders and professions of Major Munro had but little effect in quelling the seditious feeling then pervading the greater portion of the Native force, which previous impunity and conciliation had only served to foster. The two battalions stationed at Moneah, were for a short time in a state of actual mutiny, but were

speedily brought back to a sense of their duty by the influence of their officers; several other outbreaks occurred at the other stations, but none sufficiently marked or tangible to enable the Major to make such an example of them as he desired. At length on the 8th of September, a mutiny of a more serious nature occurred in the 9th, or Captain Galliez's battalion, the oldest corps in the service, then stationed at Manjee. Instigated by some of their native officers, they assembled on parade, and declared their intention of serving no longer, as the promises made to them had been broken; they however retained their arms and accoutrements, and imprisoned Captain Ahmuty and the other European officers and serjeants of the battalion; but they do not appear to have offered them any insult or other annoyance; and on the following day they released the whole, and permitted them to proceed to Chuprah, the nearest station.

"On the arrival of the officers at Chuprah, an express was immediately sent off to Major Munro; and Captain Wemyss, who was in command at that station, marched at once to Manjee, with the Marines and the 6th, or Captain Trevannion's battalion, the latter officer expressing his full reliance on the fidelity of his men. After two days of a fatiguing march, the whole country being under water, this detachment reached Manjee at daybreak on the morning of the 11th. Here they found the mutineers bivouacked in a mangoe tope, which, owing to the heavy rains that had fallen, was completely surrounded by water. Captain Wemyss drew up his detachment facing them, and the mutineers being taken by surprise, and probably without any recognised leader, lost their self possession, and after a short parley, agreed to surrender. Rafts were immediately constructed, and the whole battalion were made prisoners, deprived of their arms, and marched to Chuprah, where they arrived on the morning of the 13th.

"Major Munro, who, on receiving intelligence of this mutiny, had immediately hastened from Bankipore to Chuprah, taking with him the Grenadiers of the European battalion, was awaiting their approach. Having received a communication from Captain Wemyss, stating when he expected to arrive, the Major was on the parade with the Europeans, the Artillery, and the 15th or Captain Stabels' battalion, drawn up ready to receive them. He immediately ordered Captain Ahmuty to pick out 50 of the ringleaders; and from these he again selected 24, whom he ordered to be tried at once by a drum head court martial, composed of native officers of Captains Trevannion's and Stabel's battalions. He addressed the members of this court mar-

tial, explaining to them the heinous nature of the offence committed, and the consequence of such conduct, as regarded the whole service. The result of their decision is to be found in the following General Order of the 13th September 1764:—"At a general court martial held at the cantonments near Chuprah, on twenty-four sepoys of Captain Galliez's battalion of sepoys, confined for being taken in actual mutiny and desertion, the court having duly weighed the crime alleged against them, found them guilty of the first and third articles of the second and fifth sections of the Articles of War: and, therefore, sentenced them to be put to death, by being blown away from the guns; which sentence is approved by the Commander-in-Chief, and is to be put in execution accordingly."

"Major Munro, on receiving the verdict of the court, immediately ordered four of the prisoners to be tied to the four 6-pounders, when four grenadiers of the party immediately stepped forward, and represented that as they had always occupied the post of honour in the field, they claimed the usual priority and right of place on this occasion. The Major complied with their request, the battalion men were untied, and the gallant but misguided grenadiers occupied their places; at a signal from the Commander they were launched into eternity, and the fragments of their bodies scattered over the plain.

"A thrill of horror ran through all ranks; a murmur arose amongst the whole of the Sipahis, and Captain Williams who was present, states that there was not a dry eye amongst the Europeans, although they had long been accustomed to hard service and fearful spectacles; and amongst the Marines were two men who had actually been on the firing party at the execution of Admiral Byng, in the year 1757. The officers commanding the Sipahi battalions then came forward and represented that their men would not allow the execution to proceed any further; but Major Munro, a man of remarkably humane and considerate disposition, which qualities he evinced throughout the campaign, felt that he had a high and sacred duty to perform, on which the well-being of the whole army and the very Government depended, stifling his own feelings, he determined to proceed in his duty at all hazards; he directed the officers of the Artillery to load the guns with grape, and drawing up the Marines on one side and the European Grenadiers on the other, he dismissed the officers to the heads of their battalions, and then gave the order for the whole of the Sipahis to ground their arms, —at the same time directing the Europeans and Artillery

to fire upon any who refused to obey. This display of resolution and firmness had its due effect; the battalions instinctively obeyed the word of command, and the Major moving them a short distance from their arms, placed the Europeans and guns in the interval, and then ordered the execution to proceed, when 16 more of the party were, in like manner, blown away; the whole of them marching boldly up to the instrument of their execution and awaiting the final signal with firm and unmoved countenance. The remaining four were sent to Moneah, and there executed in a similar manner in the presence of two battalions that had recently evinced a mutinous disposition; and on the return of the Major to Bankipore on the 15th, he caused six Sipahis of other corps, who had also been convicted of mutiny, to be blown away from the guns at that station, in the presence of the assembled troops. This wholesome and well-timed display of resolution and severity effectually and completely suppressed the spirit of insubordination that had been so long existing in the native army."

Every recruit on enlisting into a native regiment is required to take an oath that he "will never forsake nor abandon his colors," and that he "will march wherever he is ordered, whether within or beyond the Company's territories." It had been the practice of Government to consider this oath, when not otherwise explained at the time of enlistment, as not in itself binding the soldier to proceed on service beyond sea, and, therefore, whenever regiments had been raised for service beyond sea, no man had been drafted or enlisted into them but at his own consent, and with a full and clear understanding of his engagement to serve beyond sea when required to do so.

An expedition on foreign service having been determined on, in 1795, a battalion of Native Infantry was thought sufficient for the service. On this determination being made known, the 15th Battalion Native Infantry immediately volunteered its services to proceed to any part of India. The high sense entertained by the government for this evidence of their zeal and good feeling was publicly made known both to officers and men. But this was only preliminary to an open revolt of the battalion, which was thereupon disbanded, by the following order:—

"*Military Department, 26th October* 1795.—The Commander-in-Chief having laid before the Governor General in Council a statement of the mutinous conduct of the 15th Battalion of Native Infantry—Resolved, that it be declared hat the said Battalion has been broke with infamy, and its olors burned.

"Resolved, further, in order to prevent misrepresentation or misconception of the transactions which have taken place in regard of the 15th Battalion, that the following declaration be published in General Orders, and that, for the more ready and general notification of them, they be translated into the Persian and other country languages, and copies of them circulated to the several native corps and dispersed by the Collectors through their respective districts.

"The 15th Battalion of sepoys having been broke with infamy, and its colors burned, the Governor General in Council thinks proper to make known to all the Subadars, Jemadars and Sepoys in the Company's Army, the cause of the severe punishment which has been inflicted on this battalion.

"The public service requiring that troops should be sent to Malacca by sea, the battalion, on the proposition of their officers, voluntarily offered themselves to embark; the proposition was repeated to them at three different times, as they might thereby have full leisure to deliberate upon it, and form their determination, and they again repeated their acquiescence.

"The Government, sensible of the prejudices of the Hindoos against a voyage by sea, and ever attentive to them, expressed their approbation at the zeal of the 15th Battalion in voluntarily undertaking service which was left to their option to accept or decline; convenient ships were prepared for their accommodation, and every precaution was used to provide wood and water, under inspection of officers and men selected and deputed by the battalion to superintend the provisions.

"To the astonishment of Government, after many days, the battalion, without any reason whatever, retracted the acquiescence which they had voluntarily and deliberately given. This was a most shameful desertion of their duty as soldiers; but their subsequent conduct was such as to leave them without any title to forgiveness. They went for many days in a state of actual outrageous mutiny, and when required by Colonel Erskine to lay down their arms, had the audacity to fire on the 29th Battalion.

"For this conduct, the battalion has been punished in the manner mentioned.

"The Governor General in Council deems it incumbent on him to take notice of the good conduct of the 29th Battalion, and he requests the Commander-in-Chief will be pleased to render the acknowledgement of the Government to Captain Breadly on an occasion so creditable to himself,

and to desire him to notify to his battalion the sense which the Governor General in Council entertains of their fidelity in the recent instance they have afforded of it.

"Resolved, that the Commander-in-Chief be requested to render to Lieutenant Colonel Erskine, the acknowledgement of Government for his manly and judicious conduct in the application of the full powers entrusted to him for suppressing the mutiny of the 15th Battalion at Midnapore.

"Resolved, that Captain L. Grant, who has evidently been acted upon, in the whole of his conduct in this affair, by an earnest zeal to fulfil the wishes of Government, be directed immediately to raise a new battalion to be denominated the thirty-seventh; leaving number 15 at present a blank in the numbers of the native corps."

The above order was followed by another on the same subject by the Commander-in-Chief, under date the 5th November 1795:—

"The resolution of the Governor General in Council, of the 26th of October, are to be most minutely and clearly explained to every native corps in the service by companies. To assist the officers in making their communications, copies of their translations in the Persian and other oriental languages, which will be forwarded to the several battalions, are also to be read and explained on the public parade, where they are to be delivered over to the Subadar, to be explained to their respective companies at leisure, until every individual understands them.

"In addition to the acknowledgement which the Governor General has ordered to be rendered to the 29th Battalion in general, the Commander-in-Chief thinks it right to notice particularly the conduct of the men who turned out volunteers to accompany the 15th Battalion, and after remaining with that corps several days, returned quietly to their own battalions, when the breaking out of the mutiny of the 15th Battalion took place, and he desires that his approbation of their behavior on that occasion may be made known to them in the most expressive terms.

"It will occur to the officers of the army that the punishment of officers and men of the 15th Battalion will by no means be complete nor proportionate to their guilt, if any of them should again return into the service. The Commander-in-Chief, therefore, most positively directs that none of them be received into any of the battalions of the Company's Army, except as should, by express permission, be incorporated into the new battalion; and he calls upon the

officers commanding native corps to exert their utmost care and vigilance to prevent their obtaining admission by the means of any imposition, and that they will attend to the first article of the section of recruits published in the general orders of September 1786, which will effectually guard against the introduction of any of the mutineers of the 15th Battalion, as well of desertion on all occasions.

"For, as the slightest observations will readily discover a trained soldier from a new recruit, the Commander-in-Chief most positively directs that no man be enlisted who has served as a sepoy, without producing a discharge from the corps he last served, and which discharge, on his admission into the service, is to be taken from him and deposited with the records of the Battalion. The truth or falsity excuses that discharges are lost or destroyed are easily discovered by a reference to the commanding officer of the Battalion which the man who offers himself for service says he belongs to.

"Instructions will be give to Captain Grant regarding the raising of the new Battalion."

In 1825, three native regiments, stationed at Barrackpore, near Calcutta, were under orders for the Burmese war. With a caste prejudice against the sea, and a prescient dread of the Burmese climate, the sepoys demurred and refused to embark. The 47th Native Infantry became openly mutinous. The Commander-in-Chief, Sir E. Paget, marched two European regiments and some artillery to the station during the night; paraded the 47th, the next morning, and ordered them to lay down their arms. They disobeyed. The guns opened on them and they broke and fled. It did not appear that the sepoys had contemplated active resistance, for though in possession of ball cartridge, hardly any had loaded their muskets. Sir E. Paget was much blamed for resorting at once to the extremest measure; but the events of 1857, which began at the same station of Barrackpore, threw a truer light on the gravity of the crime of military mutiny.

Besides the above the following may be noted in few words:—

In 1822, the 6th Madras Cavalry mutinied at Arcot; in 1844, the 34th Bengal Infantry at Ferozepore refused to march to Scinde, and the 64th Bengal Infantry mutinied at Umballa, unless their pay and allowances were increased. In 1845, the 6th Madras Native Cavalry mutinied at Jubbulpore, and the 47th Madras Native Infantry mutinied when ordered to Scinde. In 1849-50 several regiments of

Bengal native infantry stationed in the Punjab either broke into open rebellion or were prepared to do so.

THE MAHOMEDAN REBELLION OF 1857.

To the commencement of the late Persian campaign we would ascribe the first stir made by those who had been foremost in the struggle. It was then,—at the close of the last and beginning of the year 1857,—that the elements began to be agitated. The news of the capture of Herat in January had scarcely come upon us, when the tocsin of war sounded from China. Oude and our Nepaul frontier required the most careful attention. Our new Burmese possessions were sources of great anxiety. The dominions of the Nizam —the Deccan, Gwalior, Rajpootana, and the Sonthal district, all demanded the most unflinching resolution and the constant backing up of troops. The natives appeared to have been alive to the weakness of our military power—the deficiencies in every branch of the army, especially as regarded its numerical force in Europeans. The conference of friendship with Dost Mahomed Khan also placed us in an awkward position, and seems to have opened up a hornet's nest around us.

When our conquering troops had fought the battle of Mohamra on the plains of Persia, there was found in the deserted tent of the Shahzada, a manifesto by the Shah of Persia, duly signed, but without date, to the following purport:

"Whereas the British Government, through the power acquired by the conquest of India and the advantages thereby gained, has framed its politics and has pursued a course of aggression, to the end that all the East should be added to its dominions, and for the purpose of accomplishing this and advancing the performance of it, the British Government attempted the conquest of Affghanistan; and although it was overwhelmed by a complete repulse in this attempt, nevertheless, it caused great destruction and mischief in the countries of Affghanistan, and took possession of Lahore, Peshawur, and several other dependencies of that country; and this is the proceeding and politics of this Government to obtain complete dominion in Persia; they try to prohibit the intercourse with the Sirdars of Affghanistan who are our neighbours and co-religionists, and have always been our allies; and this is with a view to open to themselves a road to Persian soil, so that whenever they wish they could advance their troops from every side into Affghanistan and all the countries bordering on Persia; and even, if they possessed the power, to reduce the Government of Persia to the state of

the Rajahs of Hindostan, and *to destroy the religion of Islam in Persia, in like manner as the religion of the Musselman of India.* And in order to carry out this design, the British have commenced invading the kingdom of Persia; they have occupied themselves in deceiving the vulgar, and through deceit and bad faith, and in improper mode of proceeding, whilst our Government have never resented it; and presuming upon our supposed weakness, they have carried their ill practice and bad faith to such an extent, that they have tried to seduce persons in the employ of the Persian Government to enter the service of their Embassy, and also endeavour to bring Princes and Moonshees of the kingdom under their authority; and they have employed stratagems and artifices, so that by false pretences and improper proceedings, they have tried to bring to pass that which they desire, and by degrees all their machinations have come to light. Unexpectedly they brought troops to the soil of a power of Islam, and having thus gained a footing, took possession of one of the Forts of Islam which was on the sea shore, and was only held by a small number of troops as its fixed garrison; and thus no army being present they occupied it, and when they saw that if they advanced from the sea shore they would flounder about like fish on dry land, they have stuck there; for they knew that if they advanced the blows of the sharp swords of the heroes of Islam would not leave breath in the soul of one of them.

"But his Majesty the Shah-in-Shah has taken advantage of this breach of faith of the British Government to make manifest his royal will and pleasure; and his orders have gone forth that countless armies are to be assembled on the boundaries of every country; and victorious troops have been directed towards the frontiers to drive out the enemies of the faith, and scatter the rubbish and dirt along the shores of Arabia (for 'God giveth the victory to whom he pleases.') And now in obedience to the words of the Prophet, 'to him who doeth injury unto him in like manner as he does injury to you?' let *all the people of Heran consider it incumbent upon them to follow the precept, 'slay in the name of God those who wish to slay you,' and let the old and the young, the small and the great, the wise and the ignorant, the ryot and the sepoy, all without exception arise in the defence of the orthodox faith of the Prophet; and having girt up the waist of valor adorn their persons with arms and weapons: and let the Ullema and preachers call upon the people in the Mosques and public assemblies and in the pulpits, to give in a Jahad in the cause of God, and thus shall the Ghazis in the cause of the faith have a just title to the promises contained in the words of the Prophet, 'Verily we are of those who fought in the cause of God.'*

"But whereas the victorious army of the State have not drawn the sword upon the enemy, we have not permitted the eager multitudes to leave their homes; and in the direction of Fars, we have appointed the Ameer Ul Umra Mirza Mahomed Khan Kasheekchi Bashi, and Meer Ali Khan Shooja Ool Moolk and several other generals and commanders with 25,000 men; and in the direction of Mohumerah the Prince Nawab Shusham Ool Dowla with 20,000 fine troops; and in the direction of Kirman, Goolam Hussun Khan, Tipahdar and Jaffer Koola Khan Meer, Pun-i-jah, with regiments and Cavalry of Kurrachee, Daghi, and Axerbiyham and Kirmani to the number of 20,000 men; and in the direction of Cutch and Meekram towards Scinde, and from the direction of Affghanistan the Nawab Ahsham Ool Sultanut with 30,000 men and 40 guns, abundantly supplied and equipped; and the Affghan Sirdars (viz). Sirdar Sultan Ahmed Khan, Sirdar Shah Doolah Khan, Sirdar Sultan Ali Khan and Sirdar Mahomed Allum Khan, who have been appointed by his Majesty, *have been ordered towards India*, and they are hopeful that by the blessing of divine aid they may be victorious.

"And it is necessary that the Affghan tribes and the inhabitants of that country, who are co-religionists of the Persians, and who possess the same kuran and kiblah and laws of the Prophet, should also take part in the Jahad and extend the hand of brotherhood, and on receiving these glad tidings act according to the words of the prophet, 'Verily all true believers and brothers,' and 'also make manifest the decree of God.' 'Verily the Almighty will weigh the wicked in different scales from the pure,' *and for the purpose of settling the quarrel, it is necessary that not only a small number of true believers should stand forth in the defence of the faith, but that the whole should answer our call*, and this should also be made known to all the people of Affghanistan, that the Persian Government has no intention of extending its conquests in that direction, except to the government of Candahar, which should be given over to Sirdar Rahim Dil Khan, and the family of Sirdar Kohun Dil Khan, and the Governor of Cabool and its dependencies should be vested in its chiefs, and they should join in the Jahad against the enemies of Islam, and be of the number of those to whom the Prophet saith 'the grace of God dwelleth in the number of those who fight in Jahad;' and we are hopeful that after the publication of this proclamation, Dost Mahomed Khan, Ameer of Cabool, who always was desirous that the Persian armies should extend their conquests to Affghanistan, and who wished to be strengthened

by their alliance, should also unite with us against this tribe of wanderers from the path of righteousness, and that he should become one of the leaders of the faithful in this Jahad, and that he should become a 'Ghazi' in Hindostan, for he cannot wish for the friendship of a tribe of whom the Prophet saith, 'Verily they do not love you and neither do ye love them;' nor can he wish to sell his faith for a worldly price. *And this proclamation is published for the information of all true believers, and please God the followers of Islam in India and Scinde will also unite with us and take vengeance upon that tribe (the British) for all the injuries which the holy faith has suffered from them, and will not withhold any sacrifices in the holy cause?"*

In the passages italicised it is plainly stated—1st, that the Mussulmans of India (the Shah proclaims it) had cause for fear in the matter of their religion, from the bad faith and deceitful mode of proceeding adopted by the British by invasion and annexation. 2d. That the war he was about to enter upon was a religious war, and that all good Mahomedans should arm in defence of the orthodox faith of the Prophet, and slay and exterminate in the cause of God. 3d. That armies had been equipped and appointed to march on India for the assistance of the faithful residing there. 4th. Combination is recommended and a general rising. 5th. All true believers are informed that this war has been waged for the purpose of taking vengeance on the British for all the injuries which the holy faith has suffered from them.

The complicity of the ex-King of Oude in the rebellion was proved by several documents found at his house and others bearing his signature. Immediately after the annexation of the Kingdom of Oude to the British territories in India, which occurred in March 1856, the ex-King commenced a correspondence with the King of Delhi, proposing to induce the whole Indian army "to join as one body, rise on a day to be hereafter fixed, massacre their officers, and all Europeans, indeed all Christians, within their reach; invite all native princes to join, and after expelling the British troops, whom they might not succeed in murdering, restore the Hindoo and Musulman principalities, that existed before the advent of the Western and hated Feringhees, under the general sovereignty of the King of Kings at Delhi."

It will be out of place here to give a rough sketch of the revolt of the Bengal Army. We cannot enter into a full discussion of the causes of the mutiny—the subject would require a volume to itself—we will therefore merely state some of the circumstances to which it may be said to have been more immediately attributed.

The sepoy, by the injudicious acts of successive Governors General and Commanders-in-Chief, had been taught to think too highly of himself—to believe that he was the chief pillar of the state—the mainstay of our power in India. The bonds of discipline were too much relaxed, and finding that the government had taken all power into their own hands, the sepoy cared nothing for his officer, upon whom his welfare no longer depended, and became from various causes discontented, and then disaffected. This feeling was fostered by the ex-King of Oude and his minister, the subtle and crafty Ali Nukee Khan. The sepoys, highly credulous, like all natives of India, and ready to believe any the most monstrous tales, had their attention drawn to the various ways in which we had interfered with their religious practices; the stoppage of infanticide; the prohibition of suttee; the prevention of self immolation under the car of Juggunnath: the proselytising efforts of our missionaries, and the gradual spread of civilization;—and the sepoys became alarmed. The Brahmins, of whom there were great numbers in our ranks, found their influence decreasing from year to year, and their alarm and discontent worked on the minds of the rest. Then Lord Dalhousie made every sepoy pay postage for his letters, which had hitherto gone free under his commanding officer's signature. The roads and ferries were no longer free to him as before, except when travelling on duty. He had to pay toll like other people. These taxes were not only particularly galling to the pride of all, but irritating and burdensome to the bulk of the men, whose pay was only seven rupees a month, out of which they had to feed and clothe themselves. In 1852, when the 38th Native Infantry refused to go to Burmah, Lord Dalhousie left them unpunished, and showed the native soldiers very clearly what power was in their hands, and how safely they might defy the Government.

With all this material for revolt ready laid, there wanted but the spark to light the flame. This was supplied by the unpardonable carelessness of an official in Calcutta. The Government had decided on introducing the Enfield rifle into the Indian army. The cartridge for this rifle required a lubricating substance, which in England is made from the fat of the cow and pig's lard, and by the official before mentioned it was ordered that lubricating substance for use in India by the native troops should be similar—that (to speak plainly) the Hindoo sepoy should handle cartridges besmeared with the fat of the cow, an animal which he regarded with superior veneration. This became known to one of the guards in the arsenal in Fort William, who told

his comrades. The men were horrified; the fact was repeated with every addition that the brains of bigoted men could invent, and as the Government delayed to take any measures to quiet the minds of the sepoys, it is no wonder that they came thoroughly to believe the statements which had been allowed to circulate among them, the effects of which were apparent in the course of a few days.

On the 24th January 1857 the telegraph office at Barrackpore was burned down, the first act of insubordination; that day month a small guard of the 34th Native Infantry arrived at Berhampore, and communicated to the 19th Native Infantry stationed there the facts and fictions connected with the affair of the greased cartridge. On the 25th February Colonel Mitchell commanding, ordered a parade for exercise next day with blank cartridge; the men refused to receive the cartridges, and during the night rose and seized their arms shouting defiance. Colonel Mitchell marched against them with the Native artillery and cavalry; but as these could not be depended on, he compromised matters with the mutineers. The news of this outbreak reached Calcutta on the 4th of March, and caused the greatest excitement in the 2nd and 34th Native Infantry at Barrackpore, and nightly meetings of the sepoys took place, at which the conduct of the 19th Native Infantry was highly applauded. H. M's. 84th were sent for from Rangoon, which arrived on the 20th. On the 29th one of the 34th Native Infantry, Mungul Pandy, loaded his rifle and passed through the lines calling upon his comrades to rise. Lieut. Baugh, the Adjutant, galloped off to the parade, when Mungul Pandy fired at him, wounding his horse and bringing him to the ground. The Lieutenant fired at the man but missing him was cut down. The Sergeant Major attempted to seize the mutineer and called on the sepoys of the quarter guard to help. But the native officer forbade his men to stir, and the Sergeant Major was also cut down. The mutineer was afterwards secured and lodged in the quarter guard of the 70th Native Infantry. On the 31st March the 19th Native Infantry, were disbanded. With rage in their hearts they proceeded towards their homes, spreading disaffection and proclaiming treason everywhere. On the 4th May the 34th Native Infantry were also disbanded.

At Meerut, reports had been spread amongst the troops that the Government had plotted to take away their caste, by mixing the ground bones of bullocks with the flour sold in the market, in order that the Hindoo, in using it for food,

might lose his caste, and thus find himself compelled to embrace Christianity.

The ill-timed clemency shown to the 19th and 34th regiments convinced the Meerut troops that they had nothing to fear, and they showed their disaffection by burning the bungalows of their officers. On the 5th May this disaffection was more openly shown by eighty-five men of the 3rd Light Cavalry refusing to receive the cartridges served out to them on parade. They were brought to trial, and on the 9th condemned to imprisonment. The native soldiers were furious, and a plan was concerted for surprising the European troops when their officers were at church. It was well imagined, but the impatience of the sepoys marred it all. They could not wait, and before the appointed time, (the 11th) a large portion of the 3rd Cavalry turned out, and liberated not only their comrades, but all the prisoners confined in the jail, some fifteen hundred of the greatest ruffians in India. In the meantime the 20th and 11th Native Infantry turned out, fired the lines and the bungalows and buildings near them, murdering their officers and every European that they could find. The smoke of the burning bungalows, the yells of the sepoys, and the budmashes from the bazars and the jail, and the volleys of musketry fired, announced to India that the native army had fairly revolted. The turn-out of the European troops was delayed most unaccountably, and ere dusk the great bulk of the mutineers had got off to Delhi unpursued. On arrival there they were joined by the native troops, a massacre of all the Europeans there took place, the wretched king and his vile sons sanctioning and sharing in the slaughter. Immediately the news of the revolt of the sepoys reached the Commander-in-Chief he ordered all the European troops within reach to assemble at Umballa preparatory to marching on Delhi.

We will not give a narrative of the harrowing scenes which occurred at Cawnpore, Futtyghur, Lucknow and almost every station in the North-west; nor will we describe the progress of the seige of Delhi nor the relief of the brave garrison at Lucknow. These are matters of history. Delhi was taken after a severe struggle on the 14th September; the mutineers were dispersed all over the country, and were not subdued until they had committed great devastation and injury. The revolt was not entirely quenched till the autumn of the following year. On the 4th of November 1858, the Queen of England was proclaimed Empress of Hindostan, and the possessions in India passed out of the hands of the East India Company into those of the Crown.

CHAPTER IX.

NATIVE BARBARITIES.

Our Indian annals are unfortunately but too full of painful prison scenes of long captivity, rendered the more grievous by the added curse of the fell tropical climate, and often by the savagely ingenious barbarity of Pagan or Mahomedan gaolers, who have thought that in refining the tortures to which they have subjected the unbeliever, they have done their gods good service. From these, or rather a few taken almost at random from these, we must draw our illustrations. Our career in India has been one of warfare and bloodshed; and though victory has, save in a few extraordinary cases, been the constant attendant on our arms, it has rarely been our fortune to engage in a war of any extent or duration without consigning a few of our countrymen to the endurance of all the aggravated horrors of captivity in this burning clime.

As a specimen of these narratives, we may not unfitly take a memoir written by Captain Campbell, who fell into the hands of Hyder Ali about the year 1780, and who after enduring extraordinary sufferings, escaped to record his miserable experiences. Campbell was returning to India by what is facetiously called the overland route,—because almost the entire journey between the two countries is performed by sea. On his voyage from the Persian Gulf he was shipwrecked on the south-western coast of India, and together with a few survivors was taken prisoner by Hyder's officers. A young man named Hall shared Campbell's sufferings. These unhappy men were cast on shore in a state of utter nudity, and in that condition were carried before the governor of the place. On their journey into the interior, they were served with only boiled rice and that sparingly twice a day, and at night were obliged to lie on the bare ground. When they arrived they were put into a dungeon where their sufferings were considerably increased. Hall was soon prostrated by dysentery, and after some days' suffering ended his career. Campbell and Hall had been yoked together by their unhuman jailer, and no representations, no entreaties could induce the savage to release them from this dreadful

bondage, though it was very apparent that Hall was in a dying state. Campbell continued chained to a rotting corpse. Putrefaction came on, as in Eastern climes it ever does, with fearful rapidity; and still the inhuman captor sternly refused to listen to the promptings of mercy. At length, when the corpse was in such a state as to render it a work of difficulty to remove it, in a compact mass of corruption, the fetters were loosed.

Campbell's sufferings having reached their climax, now began somewhat to abate; the rigor of his captivity by degrees relaxed, and he at last effected his escape. The record is one, indeed, of almost incredible sufferings—the details of a most revolting character; and the inhumanity recorded difficult to understand. These men were not even prisoners of war; they were not taken with arms in their hands; they were a set of helpless men, cast by the elements on an inhospitable shore—their sufferings, endured almost in secrecy, and unknown by their friends, could not have acted as warnings to others. They were tortured from a mere love of cruelty—seemingly aiming at nothing beyond the gratification of a ferocious lust.

As a specimen of the cruelties inflicted by Tippoo Sultan on the English prisoners, who had fallen into his hands, we will quote the evidence of Colonel Braithwaite, who had been liberated after a long imprisonment:—

"During the life of the late Nabob, Hyder Ally, he had been exceedingly well treated, but at the accession of his son, Tippoo Sultan, he was immediately removed from the camp to Seringapatam. At this time he was exceedingly ill with ague and fever, and endeavoured, by remonstrances, to delay his departure until the fit was over, but to no effect; he was put in a palanquin, and carried to Seringapatam. On his arrival there, he was shut up in a dark dungeon, where he remained for many months, without seeing or speaking to any one except the Killadar and his guard. At length he obtained permission for a Mr. Holmes to be confined with him, and in this situation he remained without ever seeing daylight, except once a week, when the barber came to shave them.

"When the order arrived for their removal, on the late treaty taking place, the Killadar informed him that a palanquin and other conveniences were waiting at a Choultry about the distance of two miles: but this was like every other action. On their arrival at the Choultry, they found a miserable dooly and 15 tattoo horses, for about forty prisoners, the majority of whom had been wounded, and for want of

proper assistance, were still bleeding, which rendered them incapable to ride; but hopes of relief supported their drooping spirits. In this situation were they conducted for upwards of 70 miles, without tents or other covering than the canopy of heaven, and driven by their merciless guard like a herd of cattle. When they arrived at Bangalore, the colonel was again separated from his fellow sufferers, and confined as before until this day (April 10), which once more restored him to his friends and country.

"Bad as their treatment may have been, it is but trifling in comparison with the state of Lieutenants Speediman and Rutledge, who, in the dead of night, were taken from their confinement, and carried away to a remote part of the town, and after being forced to drink a somniferous draught, were bound, circumcised and clothed in Moorish garments; happy would it have been if the operation which proved fatal to many others, had been equally so to them; but they were reserved for a more unhappy lot. Still refusing to bear arms against their country, they were loaded with chains, and compelled to teach the Carnatic slaves the artillery exercise. It is eleven months since they have been heard of, and what is become of them God knows."

We now turn to another narrative—the "captivity, sufferings and escape of James Scurry, who was detained a prisoner during ten years in the dominions of Hyder Ali and Tippoo Saib." Scurry was a lad on board the *Hannibal* in 1780, when to the east of the Cape he had the misfortune to be taken prisoner by the French fleet. With the other prisoners he was landed at Cuddalore, and the French admiral, to his eternal disgrace, delivered over the whole party to the tender mercies of Hyder Ali. In the first instance they were taken to the fort of Chillenbroom, but were soon moved off to Bangalore. "No butcher ever drove oxen with more cruelty than they were driven." After a march of twenty-one days, they reached their destination, and then the party was divided, and Scurry, with other prisoners, carried off to Burrampore. Here they were for some days fed upon rice, when their jailers "changed it to *ragee*, the flour of which is nearly as black as coal. This no doubt," Scurry says, "occasioned the death of numbers of our poor fellows, who died in excruciating agonies, which I think would not have been the case if they had had medical assistance—but they might as well have asked for mountains of gold as anything of this nature." Out of this diminished number, however a small corps of boys was formed—fifteen in number—who were soon associated with other boys from the differen arties of prisoners. The whole number, amounting to fifty

two, were then carried off to Seringapatam, where having been well drugged with *magun*, they were formally mahomedanised; dressed out in oriental habiliments, and formed into a separate company. On the death of Hyder Ali, however, they were incorporated with Tippoo's slave battalions: and the consideration which had before been shown to them as "Hyder's children," for so they were called, soon resolved itself into brutal and ignominious treatment, of which the following extract contains a sample:—

"Once we were kept without food for two days, and conscious we had done nothing to deserve it, we sallied forth to the durbar, (a seat of justice so called), in order to exhibit a complaint of our grievances to the Killadar; but Abdel Gunney, to whom we have adverted, learning our intentions, was before us and intimated to the Killadar to take care of his person, for that we were coming in a body, and he knew not for what purpose. This alarmed the governor; and we no sooner arrived than we were surrounded by a battalion of sepoys, and our interpreter, Clark, a Lieutenant in the Company's service, who had begun to speak, was knocked down and beaten in a most shocking manner. While he lay on the ground, they put him in heavy irons, and took him away, nor do I recollect ever seeing him afterwards. All this time we were secured by the sepoys, who had orders to prime and load, and to fix their bayonets; and all this against fifty-two defenceless boys. We were seized and each of us was bound with two new ropes, confining our hands behind us; and, to make us secure, a strong man enclosed our arms, and with his knee almost dislocated our shoulders; many of us had the marks in our arms for some years after. This done we were wheeled to the right, then to the left, by the myre or adjutant, in broken English, who would frequently, in the most contemptuous manner, cry out 'General Mathews,'—'Colonel Baily,'—'Captain Ramney,'—and repeat the names of many officers they then had in their custody, of whom I shall very soon give the reader an accurate account. We were hauled in this degrading manner, until I and several more fainted; when I came to myself, we were all seated on the ground. I was bound between two lads, both midshipmen of the *Hannibal*, who told me, when I fell they fell, with most of the rest; those who did not, informed us that so many falling, they were ordered to sit down. The skin of our breasts was like a drum head, and I am conscious to this day, if it had not been for the humanity of the duroga, an officer equal to a sergeant, in slackening the ropes about 12 o'clock at night, very few would have survived till the morning. This was done on his part at great risk; may God reward him for it!

"Not contented with shaving and circumcising the youths, the Musalmans scalded them in huge coppers, to boil the impurities off their bodies. The reason assigned for this was that we had eaten a large quantity of pork in our time, and were therefore unclean.

"The next day we were ordered to be untied, one by one, and our heads to be again shaved, which was performed; our ears also were bored, and a slave's mark was put in each of them. This being done, we were prohibited from speaking to each other in English, under pain of severe punishment. We were then marched, or led crawling rather, to our square, where they gave those who could immediately make use of it, some food. Here we met every day, more or less, with severe treatment, until the year 1784, when a peace was concluded between the East India Company and Tippoo."

On the conclusion of this peace many of the prisoners in the Sultan's hands were given up, but Scurry and his companions, of whom, in all probability, little was known in the British camp, were abandoned to their fate :—

"One morning, we were all sent for in a great hurry, and seated on the ground in front of the palace. An hour elapsed, during which period hope and fear alternately succeeded. A few were quite sanguine that we were going to be released. Vain imagination. We were escorted under a strong guard to Mysore, nine miles from the capital, where we were separated, and sent to different prisons. The spot I was in was the fatal place where Captain Ramney, and Lieutenants Fraser and Sampson had their throats cut; and about this period, Lieutenants Rutledge and Spediman were mahomedanised. The latter cut his own throat between the Mysore gates; and the former, an amiable character, after surviving him about three years, being suspected of correspendence with the English, was sent to Naraindroog, or rock of death, perhaps as unwholesome a spot as any in Asia. If this did not answer the end intended, that of putting a period to his existence, it is highly probable that poison, or the butt ends of muskets did. This Naraindroog was the place to which the afflicted Hindoos were sent by hundreds."

During four years Scurry and his companions continued to bear the burthen of this oppressive captivity, hurried from place to place, often threatened with death, and often on the verge of starvation. Many of the party died; some were murdered; and the sufferings of those who lived were such as to make them envy the departed. Tippoo had taken it into his head to provide this battalion with wives, and the young

men were all regularly married according to the ceremonials of mahomedanism. This does not seem to have mitigated their griefs. On the renewal of the war, the prisoner-battalion affected great loyalty in the cause of the Sultan, and were employed by him in operations against the Mahrattas. Some of them were killed, when fighting with much gallantry, and many of the remainder took advantage of the opportunity afforded by the confused state of the country, to make their escape; and after undergoing considerable hardships and privations on the way, arrived in safety in the English camp.

A party of prisoners, consisting of sixteen captains, a major and the commissary guard of General Mathews' army, were sent to Kavel Droog to undergo their imprisonment, by order of Tippoo Saib, in 1783. Immediately on their arrival at that place they were put in irons and subjected to the harshest treatment. Shortly after a guard had been sent from another garrison to relieve the guard that had been over the prisoners. The second day of the new guard's being there, the commandant of it put himself in the evening at the head of most of the troops in the place and repaired to the prison, attended by some persons who had in their hands bowls of green liquid. The prisoners were ordered to advance two by two, and the commandant informed them that it was the Nabob's orders that they should drink the liquor contained in those bowls. The prisoners refused to drink. The commandant informed them that what was in the bowls was poison, and that if they did not at once drink it, the Nabob's orders were that they should be seized and tied, and thrown alive down the precipice of Kavel Droog mountain. He allowed them one hour to decide. When the time had expired, the British officers advanced to the commandant, and informed him that they were ready to drink the poison, but they did not doubt that the day would arrive, when Tippoo Sultan would meet the just reward of his inhuman cruelty, exercised so wantonly on a set of innocent men. They then drank the poison, which operated with violence, and in the space of one hour the bodies of all were extended lifeless before the commandant.

As an illustration of the power of supersitition, the following is a relation of an occurrence in 1670:—"The English had at this time a factory at Batacola (a seaport next to the southward of Onore,) when a ship came to lode, the Captain of which had a fine English bull dog, which he presented to the chief of the factory. After the ship was

gone, the factory, which consisted of eighteen persons, were going a hunting and carried the bull dog with them, and passing through the town the dog seized a cow devoted to a Pagod and killed her. Upon this the priests collected a mob, who murdered the whole factory; but some natives who were friends to the English, made a large grave and buried them all in it. The chief of Carwar sent a stone to be put on the grave with this inscription:—'This is the burial place of John Best and seventeen other Englishmen, who were sacrificed to the fury of a mad priesthood and an enraged mob.' The English did not renew their factory there."

The event of which we are about to write happened at a time when Hyder had overrun and wasted the greater part of the Carnatic; and in conjunction with the French, after taking Cuddalore, hoped to expel the English from all that territory. He had lately defeated Colonel Baily's detachment, and made them prisoners, and used every effort to get as many of the English as possible into his power, in order either to tempt them into his service, or to gratify his brutality by exposing them to a lingering death. He had bribed Suffrein with three hundred thousand rupees, to surrender up to him all his prisoners at Cuddalore; and the order being communicated to the commander of the fort, nothing could exceed the indignation and grief which he and his officers testified at such an infamous bargain. However, as he dared not disobey the order of his superior, he informed the gentlemen on parole of the transaction, and his necessity for delivering them up the next day, to the escort appointed to carry them to Seringapatam:—

"Captain Wilson no sooner received the intelligence, than he determined that very night, if possible, to attempt his escape, from a captivity which appeared to him worse than death. He had observed, as he walked the ramparts, the possibility of dropping down into the river; and though he neither knew the height of the wall, nor the width of the rivers which were to be crossed, before he could reach a neutral settlement, he determined to seize the moment of delay and risk the consequences, whatever danger or difficulty might be in the way.

"He communicated his resolution to a brother officer and a Bengalee boy, his servant, who both resolved to accompany him in his flight. It was determined that the three should meet on the ramparts, just before the guard was set, as it grew dark, and silently drop down from the battlement. Before the hour appointed, his companion's heart

failed him. About seven o'clock, he with his boy, Toby, softly ascended the rampart unperceived, and the Captain leaping down, uncertain of the depth pitched on his feet, but the shock of so great a descent, about forty feet, made his chin strike against his knees, and tumbled him headlong into the river, which ran at the foot of the wall, and he dreaded lest the noise of the dash into the water would discover him. He recovered himself, however, as soon as possible, and returning to the foot of the wall, where there was a dry bank, bid the boy drop down, and caught him safe in his arms.

"All that part of the Tanjore country is low and intersected with a number of rivers, branching out from the great Colleroon: these must all be necessarily crossed. He inquired, therefore, of the boy if he could swim; but found he could not. This was very embarrassing; but he resolved not to leave him behind, and therefore took him on his back, being an excellent swimmer, and carried him over. They pushed towards Porto Nuovo, about four leagues and a half from Cuddalore. They had passed three arms of the river, and advanced at as great a pace as they possibly could, to make use of the night, since their hope of safety depended chiefly on the distance they could reach before the morning light. Not far from Porto Nuovo, a sepoy sentry challenged them, on which they shrunk back and concealed themselves turning down to the river side. The river in that place was very wide, and being near the sea, the tide was running in with great rapidity. He took, however, the boy on his back, as he had done before, and bid him be sure to hold only by his hands and cast his legs behind him; but when they came into the breakers, the boy was frightened, and clung around the captain with his legs so fast as almost to sink him. With difficulty he struggled with the waves, and turning back to the shore, found they must inevitably perish together if they thus attempted to proceed. Therefore setting the boy safe on land he bid him go back to Doctor Mein, who would take care of him, but the poor lad was never afterwards heard of, though the most diligent inquiries were made to find him. 'As delay was certain death to him, he plunged again into the stream, and buffeting the waves, pushed for the opposite shore; but he found the tide running upwards so strong that in spite of all his efforts he was carried along with the current, and constrained, at a considerable distance, to return to the same side of the river. Providentially, at the place where he landed, he discovered by the moon light, dry on the beach, a canoe, which he immediately seized, and was drawing down to the river, when two

of the natives of the country rushed upon him and demanded whither he was going with that boat. He seized the outrigger of the canoe as his only weapon of defence against the paddles which they had secured, and told them he had lost his way; had urgent business at Tranquebar, and thither he must and would go; and launched with all his remaining strength, the canoe into the river: the good-natured Indians laid down their paddles on the shafts, and whilst he stood in the stern, rowed him to the opposite shore. He returned them many thanks, having nothing else to give them, and leaping on the beach, immediately pushed forward with all his might. He found he had as great a distance to pass to the Colleroon as he had already travelled, and therefore continued his course with full speed, the moon shining brightly; and before break of day reached the largest arm of the river, of which those which he had crossed were but branches. Exhausted with the fatigue he had undergone, and dismayed with the width of this mighty stream, he stood for a moment hesitating on the brink; but the approach of morning, and the danger behind him being so urgent, he stretched out his arms to the flood, and pressed for the shore. How long he was in crossing he could not ascertain, for somewhat near the centre of the river, he came in contact with the mast of a ship, or a great tree floating with the stream; on this he placed his hands and his head; in which perilous position he thought he must have slept by the way, from some confused remembrance as of a person awaking from a state of insensibility, which he supposed had lasted an hour at least. However, with the light of the morning he had reached the land and flattered himself that all his dangers were over and his liberty secured; when after passing a jungle road which led to the sea side, he ascended a sand bank to look around him. There, to his terror and surprise, he perceived a party of Hyder's horse scouring the coast, and being discovered by them they galloped up to him; in a moment they seized him and stripped him naked, unable to fly or resist, and tying his hands behind his back, fastened a rope to them, and thus drove him before them to the head quarters, several miles distant under a burning sun, and covered with blisters. He supposed he must have gone that night and day more than forty miles, beside all the rivers he had crossed. But to what efforts will not the hope of life and liberty prompt? What sufferings and dangers will not men brave to secure them? Yet these were but the beginning of his sorrows.

The officer at the head-quarters was a Mahometan, one of Hyder's chieftains. He interrogated the poor prisoner

sharply, who he was, whence he came, and whither he was going? Mr. Wilson gave him an ingenuous account of his escape from Cuddalore, and the reasons for it, with all the circumstances attending his flight. The Moorman, with wrath, looked at him and said *jute bat*,—"That is a lie," as no man ever yet passed the Colleroon by swimming, for if he had but dipped the tip of his fingers in it the alligators would have seized him. The Captain assured him it was the truth, and gave him such indubitable evidence of the fact, that he could no longer doubt the relation; when lifting up both his hands he cried out, *Khuda ka Admi*, "this is God's man."

He was immediately marched back, naked and blistered all over, to the former house of his prison, and in aggravated punishment for his flight, Hyder refused him permission to join his fellow officers, his former companions, and thrust him into a dungeon among the meanest captives. Chained to a common soldier, he was next day led out, almost famished, and nearly naked, to march on foot to Seringapatam in that burning climate, about 500 miles distant. The officers beheld his forlorn condition with great concern, unable to procure him any redress, but they endeavoured to alleviate his misery by supplying him with immediate necessaries. One gave him a shirt, another stockings and shoes, so that he was once more covered and equipped for his toilsome journey. But his brutal conductors had no sooner marched him off to the first halting place than they again stripped him to the skin, and left him only a sorry rag to wrap round his middle.

In this wretched state, chained to another fellow sufferer, under a vertical sun, with a scanty provision of rice only, he had to travel naked and barefoot, five hundred miles, insulted by the men who goaded him all the day, and at night thrust him into a damp, unwholesome prison, crowded with other miserable objects.

On their way they were brought into Hyder's presence, and strongly urged to enlist in his service, and profess his religion, and thus obtain their liberty: to induce them to consent, when plausible words were of no avail, horrible severities were inflicted on them, and to escape these at any rate, some of the poor creatures consented. But the Captain rejected these offers with disdain, resolved to prefer death, with all its horrors to desertion and Mahomedanism. In various villages through which they passed, in their long march, he was placed under cover, and exhibited to the country people as an object of curiosity, many of them never

having seen a white man before. Then he was forced to present himself in all possible positions, and display all the antics of which he was capable, that his conductors might obtain money from these poor villagers at the expense of their captives.

In consequence of the dreadful nature of this march, exposed by day to the heat, and cooped up in a damp prison by night, without clothes and almost without food, covered with sores, and the irons entering into his flesh, he was, in addition to all the rest of his sufferings, attacked with the flux, and how he arrived at Seringapatam alive, so weakened with disease, is wonderful. Yet greater miseries awaited him there; naked, diseased, and half starved, he was thrust into a noisome prison, destitute of food and medicine, with one hundred and fifty-three fellow sufferers, chiefly Highlanders of Colonel Macleod's regiment, men of remarkable size and vigour. Irons weighing thirty-two pounds, were fastened on him, and this peculiar rigour, he was informed, was the punishment of his daring to attempt an escape, as well as for his resolute rejection of all the tempting offers made him. While the other officers were at large, Captain Wilson was imprisoned with the common soldiers, and chained to one of them night and day.

It is hardly possible to express the scene of unvaried misery, that for the two and twenty months he suffered in this horrible place. The prison was a square, round the walls of which was a barrack for the guard. In the middle was a covered place open on all sides exposed to the wind and rain. There, without any bed but the earth, or covering but the rags wrapped round him, he was chained to a fellow sufferer, and often so cold, that they have dug a hole in the earth and buried themselves in it, as some defence from the chilling blasts of the night. Their whole allowance was a pound of rice a day per man, and one rupee for forty days, or one pice a day, to provide salt and firing to cook their rice. It will hardly be believed, that it was one of their eager employments to collect the white ants, which pestered them in the prison, and fry them to procure a spoonful or two of their buttery substance, to stay the raging hunger that was never appeased by an allowance scarcely able to maintain life; and the rice was so full of grits, that he could not chew but must swallow it, and often (he said) he was afraid to trust his fingers in his mouth, lest he should be tempted to bite them. Their rice was brought in a large bowl, containing the portion of a given number; but that none might take more than his share, they provided themselves with a small

piece of wood, rudely formed into a spoon, which no one was suffered to use but in his turn, and such was the keenness of hunger and his eagerness to obtain food, that his jaws often snapped the spoon by an involuntary motion, as though forced together by a spring.

The athletic Highlanders were among the first victims. The flux and dropsy daily diminished their numbers. Often the dead corpse was unchained from his arm in the morning, that another living sufferer might take his place, and fall by the same disease. How his constitution could endure such sufferings is astonishing. Yet he had recovered from the flux, which he carried into tho prison, and for a year maintained a state of health beyond his fellows. At last worn down with misery, cold, hunger and nakedness, he was attacked with the usual symptoms of the disorder which had carried off so many others. His body was enormously distended, his thighs as big as his waist was before, and his face exceedingly bloated.

Reduced now to the extremity of weakness, his chains too straight to be endured, and threatening mortification, he seemed to touch the moment of his dissolution. The soldier to whom he had been last chained, had served him with great affection, whilst others who had been linked together often quarrelled, and, rendered mad by their sufferings, blasphemed and aggravated each other's miseries. Seeing him thus to all appearance near his end, thinking it might alleviate his pain, the soldier entreated he might spend for oil, the daily allowance of money paid him and anoint his legs, but the Captain objected, as he should have nothing to buy firing and salt to cook the next day's provisions. The soldier shook his head, and said, "Master, before that I fear you will be dead and never want it." But who can tell what a day may bring forth? He had exchanged his allowance of rice that day for a small species of gram, called *ratche pier*, which he eagerly devoured, and being very thirsty, he drank the liquor in which it was boiled, and thus produced such an amazing effect, that in the course of a few hours his legs, and thighs and body, from being ready to burst, were reduced to a skeleton, and though greatly weakened, he was completely relieved. He afterwards recommended the trial of the same water, with success, to many of his fellow-prisoners. His irons were now replaced by others less heavy; and being mere skin and bone, they would slip over his knees, and leave his legs at liberty.

The ravages of death had now thinned their ranks, and

few remained the living monuments of Hyder Ally's cruelty and malignity: nor would these probably have contested with their miseries many more months or days, but the victories of Sir Eyre Coote happily humbled this tyrant, and compelled him reluctantly to submit, as one of the conditions of peace, to the release of all the British captives. With these glad tidings, after they had spent twenty-two months on the verge of the grave, Mr. Law, son of the Bishop of Carlisle, arrived at Seringapatam, and to him the prison-doors flew open: but what a scene presented itself! Emaciated, naked, covered with ulcers, more than half-starved, only thirty-two remained out of one hundred and fifty-three brave men, to tell the dismal tale of the sufferings of their prison-house.

Of the massacre of the English at Patna we have another account by Major Adams. He says, that "on the 6th October 1763, at 7 in the evening, the gentlemen of the factory having drank tea, were informed by Mr. Ellis' servant, that Someroo was arrived with some sepoys, on which Mr. Ellis immediately ordered a chair to be brought for him, but instead of going to the gentlemen, he sent away the Mogul who had the charge of them, and went into the back room and gave orders to the servants, who were getting supper ready, to be gone. He then sent for Messrs. Ellis and Lushington, who being acquainted he had private business with them, immediately went to him, and were instantly cut down, afterwards Messrs. Hay, Lyon and Jones were sent for and dispatched in the same manner, as were likewise Messrs. Chambers, Amphlett and Gulston, who were next sent for, with Mr. Smith, but he receiving a cut on the shoulder escaped into the room, and acquainted the rest of the gentlemen, who defended themselves with bottles and plates (their knives and forks being taken from them after dinner) and obliged the sepoys to retire, who immediately loaded their pieces and shot them; twenty-five were in irons, the above named gentlemen with others amounting to twenty-four more, were not in irons. Captain Wilson, Ensign Mackay, Dr. Campbell and five or six others were murdered at Chalisatoon, where they were confined with Dr. Fullarton, who was the only gentleman that was not put to death." This account was given to Major Adams by a consumah of Mr. Albright.

On the receipt of the intelligence in Calcutta the Board ordered that the whole settlement should go into deep mourning for fourteen days, and that minute guns should be fired by every ship in harbour, and by the new and old forts. A manifesto was published offering a reward of a lakh of

rupees for the person of Cassim Ally Khan, the instigator of the massacre, and Rs. 40,000 for the person of Someroo. And measures were immediately adopted for taking ample revenge for the murder.

The Nawab was applied to in June 1764, "to make over the house at Patna where the massacre was perpetrated, and the ground thereunto belonging," and the resident was directed when he "obtained such a grant, to have the house entirely demolished, and the whole ground railed in in a square, in the centre of which the monument will be erected agreeably to a plan which we shall send."

The following narrative is given by Captain Bristow, of his imprisonment by Tippoo, and his escape from prison after many sufferings:—"I was sent in February 1781, to destroy the French boat at Pondicherry, with Quartermaster Doxit, and, returning after the service was completed, was taken by a party of Hyder's Horse and conducted to his camp. I was sent to Gingee and put in irons; on refusing to enlist in his service, I was sent thence to Arcot, and to Seringapatam, in company with Colonel Baily, Captain Rumley and Lieutenant Frazer; after eight months' confinement I was put to exercise a number of slave boys with sticks made in the form of wooden firelocks. On our refusing to do this, at first, our subsistence was stopped for three days, and we were threatened to be starved to death if we refused. On the conclusion of the peace we were sent to Mysore, and kept there four months close prisoners in the same hole where Captain Rumley, Lieutenants Frazer and Sampson were put to death—and sent back to Seringapatam after the prisoners were returned, and made to act as havildars over the boys. We were sent thence to a small mud fort called Chindripatam; here our allowance was augmented to nine rupees per month (or forty-five days,) having only eight *yari fanams* per month before, with three-fourths of a seer of rice per day; (four of these fanams make a rupee.) I was sent to Seringapatam again, and put over the Malabar Christians as a Havildar. Sometime after I was sent again to Mysore, then back to Seringapatam; about this time Tippoo went to war with Mober Jung, and brought about thirty Europeans with him; five of them deserted to Hidona, which occasioned all the rest to be sent back. Lieutenant Rutledge and Mr. Smith were with these people. On their arrival, all the Europeans were gathered from the different places, and put close prisoners in a square, on a seer of rice per day. They remained so till Tippoo's arrival, when they were released, and divided into three parties, one for Chitteldroog,

one for Bednore, and one remained in Seringapatam, among which I happened to be. I remained there till last September 1790. After Colonel Floyd's engagement I, was put in irons, sent to Hatirdroog (a place on a rock,) and condemned to death. I lived on the charity of the people in the fort for eight weeks. Twelve of us broke prison on the 28th November, and after suffering incredible hardships, I arrived at Copaul after losing all my companions." The fate of some of those who were prisoners is thus given. "Colonel Bailey was poisoned at Seringapatam in 1782, and so was General Mathews; Captain Rumley and Lieutenants Frazer and Sampson were murdered at Mysore, on refusing to take poison. Mr. Spediman cut his throat at Seringapatam. Mr. Rutledge was shot. Messrs. Wilson, Ediman and Austin died at different places. The fate of some was never known."

Captain Alexander Bannatyne, commanding the ship *Nancy*, of Bombay, was on the 18th of November 1788, forcibly seized by the Shahbandar's peons, at Rangoon, by order, as they said, of a general of the King of Ava, who was there with an army on his march to Martaban. They accused Mr. Bannatyne of the murder of a person belonging to his ship on a former voyage, and affected to examine witnesses for two days; "when it appeared from the testimony of the officers and lascars who were on board, that there was no pretext for the accusation, they proceeded to a more summary method, and on the 20th forced Mr. Bannatyne to the camp, where they threatened him with the ordeal of boiling lead, and the loss of his head if found guilty on this trial, in which the heat of the lead was to be the judge, if he did not instantly pay 3000 teculs. They dragged him to the place of torture, and put his legs in stocks, extended and spread, for some minutes; then hoisting him up by the feet, kept him suspended in such a manner, that his hands alone could barely touch the ground. At the end of half an hour, they took him down, but not until he had actually paid the sum thus extorted by such horrible torture."

The following are the circumstances of a daring outrage committed in the district of Benares:—"Mr. Alexander Glegg, a gentleman engaged in the manufacture of indigo at Ashrufgur, situated within the Benares province, but contiguous to the territory of the Nabob Vizier, was alarmed at midnight on the 25th ultimo, (March 1796), by the firing of muskets. On getting up to make enquiry, a ball passed so near him as for some time to deprive him of recollection; at length recovering, he prepared for resistance, but his servants having made their escape, he was seized and knocked down,

and being put into a dooly, conveyed to a jungle where the whole of the banditti, computed to be five hundred, were collected together, and having broken open his trunks which they had plundered, made a division of their booty. At this Mr. Glegg discerned that he had fallen into the hands of Sooltanut Sing, a man of notorious bad character, who had formerly held some lands in Benares. He was compelled to give up the dooly to Sooltanut Sing, and himself to walk, in which manner they proceeded twenty miles in a north east direction through the Nabob's country. He then represented to Sooltanut Sing the impossibility of his walking further, as he had neither stockings nor shoes, and his feet were inflamed by thorns, and the road of hard kunker, insomuch that he was unable to stand upright. A small dooly was in consequence provided, and on the 26th they continued their journey chiefly through jungles. On the morning of 27th Sooltanut Sing sent for Mr. Glegg and made him write a letter to Mr. Lumsden at Benares to release his son, and to pay the rent of the Bodlapore talook, which he alleged to belong to him, declaring that his prisoner's life should be the forfeit, if this were not complied with. At length their journey was continued by the light of the moon, and in the morning they arrived at the village of Sumsabad, where numbers of armed men paid their respects to Sooltanut Sing, and amongst them Minorat Sing, of the same character, with above two hundred followers. This man having heard Mr. Glegg's relation and his conversation, that Mr. Lumsden could not attend to the application made to him, in which case he was threatened with death, was induced to intercede for him with Soolanut Sing, and with some difficulty obtained his release on a promise of paying two hundred rupees."

On the 14th of January 1799, after the assassination of Mr. Cherry by Vizier Ali, the deposed Nawab of Oude, that unscrupulous murderer directed his followers to put to death all the Europeans in Benares. Captain Conway, and Mr. Evans were slaughtered in Mr. Cherry's house, and Vizier Ali then led his band to Mr. Davis' residence, killing two other gentlemen in the way. Mr. Davis was the Judge and Magistrate. A sentinel at Mr. Davis' gate opposed the entrance of the party, and by shooting him they gave notice of their approach and design to his master. He instantly armed himself with a hog spear, and took refuge with his wife and children upon the flat roof of his house. His assailants rushed after him; but the narrow staircase would only admit their passing one by one. One by one Mr. Davis was prepared to encounter them, and with the utmost coolness and courage for the dear lives of his wife and children

who stood behind him, he kept them at bay. Two or three of his assailants were killed, and others were desperately wounded. For more than an hour and twenty minutes this fearful strife was maintained. Then a body of Cavalry rode in to the rescue, at the approach of which the assassins took to flight. Mr. Davis had the high satisfaction of knowing that his bravery saved not only his own family, but several others. He detained the murderous party by his unexpected defence, until the time for doing further harm was gone. To him it was, under God, due that the "Benares massacre" numbered so few victims.

As late as 1818 an act of barbarity was committed on the 2nd July, within ten miles from Calcutta. The *Government Gazette* of the 9th July thus describes this burying alive:—"Two gentlemen proceeding up the river Hooghly, observing a concourse of people assembled at Corder, a village about two miles below Ishera, and learning the cause, put on shore in the vain hope that their presence would prevent the immolation of a human being. This, however, they had reason to believe expedited the ceremony, for on getting on shore the woman had been placed in the hole dug for the purpose, with the dead body of her husband. The hole was about 8 or 9 feet deep, and about three in diameter, like a well (with the bodies placed upright,) into which the relations were throwing the earth, and the eldest son of the woman, about nineteen years old, dancing over the bodies in the hole, and treading it down until it came above the heads, when a general shout closed the monstrous and horrid ceremony."

The exposure of the sick on the banks of the Ganges existed for many years after the English had been firmly established in India. During the prevalence of cholera in 1825 it was remarked by the newspapers of the day, that many seized by that disease were carried to the river bank, and murdered under the pretext that they were in a dying state, by forcing mud and water of the Ganges into their mouths. "In my way down from the upper provinces," says a correspondent of the "Columbian Press Gazette" of August 1825, "my budgerow stopped at a ghat on the Hooghly river, in the vicinity of Moorshedabad. The crowd which was collected on the spot excited my curiosity to know what occasioned it. I went to the place, and witnessed one of the most inhuman scenes that can be imagined. A poor helpless creature was stretched on a cot, the lower part of his body being immersed in water. In this posture he was imploring his murderers in the most pitiful manner to let him go, declaring that he was yet far from death.

But those cruel wretches that were about him, unmindful of his entreaties, kept crying Hurri Bol! Hurri Bol! and continued filling his mouth with water, till at length the poor creature became exhausted; his voice, which was at first loud, gradually sank, and he fell an unwilling victim to superstition." Hundreds of similar instances might be narrated, but their harrowing details are of the same nature.

In the *World* paper of July 1829, we find notice of murders committed at Diamond Harbour by the exposure of the sick on the river bank to be devoured by wild beasts: —"I witnessed an instance," says a correspondent, "where a diseased mother was exposed, with one infant at the breast, and another about two years of age with no visible disease. We had landed to dig a grave and bury an officer, who had died in the night. Going next day to examine if the jackals had torn up the officer's grave, I observed the elder babe dead, the younger crawling about it, and the mother had been devoured! Being anxious to know the fate of the surviving infant, I went next day, and found it had crawled under the bottom of a boat, and the dead child had disappeared: next morning the other had been devoured also. This was at Diamond Harbour, where the population not being great, we might have saved one of the children, but feared to try; as I had been in great danger from the natives at Calcutta, a short time previously, by attempting to carry off one in a boat, who was laid on the beach with a number of other human sacrifices. This was an interesting young woman, who happened to lie near the boat I was getting in; she seemed to be overjoyed when I raised her up; and looked equally dejected whan I was obliged to drop her and hasten into the boat to avoid the stones which were thrown at me."

John Lang in his "Wanderings," (published in 1859) gives us an account of what he saw some years before the mutiny, in some excavations which were made on the grounds of a house belonging to the famous contractor Joteepersad of Agra, and which had once been the site of a palace. The apartment was the tykhana of the dwelling, about sixteen feet square:—"Whilst examining the walls I observed that, upon one side there was a ledge about six feet high from the floor (and carried up therefrom,) and about a foot in width. This ledge which was of brick and plaster, resembled a huge mantelpiece, and was continued from one end of the apartment to the other. One of the workmen took a pickaxe and dug out a portion, when to my surprise and horror, I discovered that in this wall a human being had been bricked up. The skin was still upon

the bones, which were covered with a costly dress of white muslin, spangled all over with gold; around the neck was a string of pearls; on the wrists and ankles were gold bangles, and on the feet were a pair of slippers, embroidered all over with silver wire or thread; such slippers as only Mahomedan women of rank or wealth can afford to wear. The body resembled a well preserved mummy. The features were very distinct, and were those of a woman, whose age could not at her time of death have exceeded eighteen or nineteen years. The head was partially covered with the white dress. Long black hair was still clinging to the scalp, and was parted across the forehead and carried behind the ears. In that wall there were no less than *five* bodies—four besides that already alluded to. One of the number was a young man, who, from his dress and jewels on his finger bones, must have been a person of high rank; perhaps the lover of one, or both of the young women, for he had been bricked up between two of them. The others were evidently of confidential servants, old women, for they had grey hair. The air had a speedy effect on them, and, one by one, they fell; each forming a heap of bones, hair, shrivelled skin, dust, jewels and finery. How many years had passed since that horrible sentence had been put in execution? not less than one hundred and seventy, or perhaps two hundred."

The Goomsur (Khond) human sacrifices, which are now happily abolished by the British Government, were thus performed:—"When a sacrifice is to be celebrated by a tribe or a portion of one, parties are sent to obtain a victim. The people meet together and continue together for three days, which are spent in the indulgence of every form of wild riot, and generally of gross excess. The victim, who has been kept fasting is on the second of these days, carefully washed, dressed in a new garment and led forth from the village in solemn procession, with music and dancing, to the meriah grove. He is then seated at the foot of a post, to which he is bound by a priest. He is then anointed with oil, ghee, and turmeric, and adorned with flowers, and a species of reverence is paid to him throughout the day. As the victim must not suffer bound, nor on the other hand, make any show of resistance, the bones of his arms, and if necessary, those of his legs, are sometimes broken; if such is not done, stupefaction is produced by the administration of opium. The priest assisted by the chief and one or two of the elders of the village, now takes the branch of a green tree cleft several feet down the centre. They insert the victim between the rift, fitting it in some districts to his chest, in others to his throat. Cords are then twisted round the open ex-

tremity of the stake, which the priest, aided by his assistant strives with his whole force to close ; he then wounds the victim slightly with an axe, when the crowd throws itself upon the sacrifice and strips the flesh from the bones leaving untouched the head and intestines." These sacrifices used to be made to propitiate the earth goddess for rain, abundant crops, &c. Sometimes the victim was put to death slowly by fire :—
" A low stage is formed, sloping on either side like a roof; upon it the victim is placed, his limbs wound round with cords so as to confine but not to prevent his struggles. Fires are lighted, and hot brands are applied so as to make the victim roll alternately up and down the slopes of the stage. He is thus tortured as long as he is capable of moving or uttering cries ; it being believed that the favor of the Earth goddess, especially in the supply of rain, will be in proportion to the quantity of tears which may be extracted. The victim is next day cut to pieces."

CHAPTER X.

NATURE'S WONDERS.

PERHAPS few of our readers are aware of the various natural phenomena which are often witnessed in India, and are very remarkable in their nature. In Europe we have the Fata Morgana in Italy, and various descriptions of mirage in other countries, and in the northern seas the Aurora Borealis in all its different forms. In this part of the world we have phenomena as remarkable and as worthy of notice.

RAJA HARCHAND KA PURA.

One is called by the natives Raja Harchand ka Pura. This is a phenomenon which differs somewhat from what is called the Fata Morgana in Italy, partaking more of the nature of what is called the French mirage. During a slight shower of rain an aerial city appears, with its palaces, temples, houses, spires, columns, &c., forming altogether a very beautiful spectral appearance, which remains visible for the space of ten minutes; after which it begins to alter its appearance, becoming faint and dilapidated, till it gradually disappears altogether with the passing shower.

MIRAGE IN INDIA.

It is not generally known that the mirage, apparently first brought to the notice of modern Europeans by the French army in Egypt, is visible in the central parts of Hindustan. In Rajpootana it is of constant occurrence; but in the less arid plains to the eastward it is also to be seen. In Ghazeepore, between the European bazar and the stud stables, there is a level extending about a mile, from the east end of which may very often be seen, about half a degree under the western horizon, the appearance of a sheet of water about one degree in width and perhaps ten degrees in length from right to left, in which the sky, houses, trees and animals are reflected as in a bright mirror.

Few have traversed the plains of many parts of India without being struck by the appearance of distant cliffs, sometimes also of towns and forests, seen shortly after the rising of the sun, but which they have looked vainly for

later in the day. The ordinary mirage of India occurs at distances of from three to eight miles; but sometimes the effect may be produced at distances so remote, that the substance is completely hidden in the convexity of the earth, and only the reflected image is seen suspended in the air.

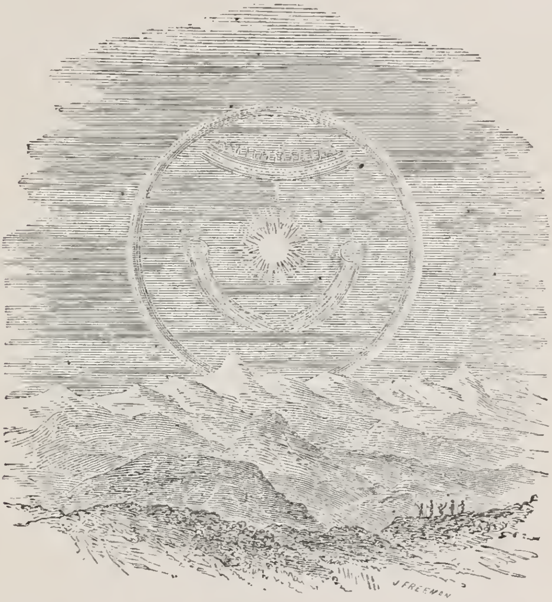
The most general appearance of the mirage is that of a long range of cliffs standing to westward of the spectator. These cliffs are of so substantial an appearance, so marked with rents and fissures, so tufted with bushes, shrubs and lichens, so clear and distinct of outline, that it is scarcely possible for an unpractised eye to doubt their reality. Trees are the objects most commonly pictured by the mirage; the darkness of their hue enabling them to be seen at long distances. But sometimes the monotonous aspect of the cliff is diversified and enlivened by the presence of a white town or of moving objects. Every stump of a tree becomes a palm or a column; every little bush becomes a tall mass of foliage; the imaginary cliffs are clothed with the richest verdure, stolen from green corn fields drawn up aloft as if by enchantment to garnish the fairy structure. Small, white, moving figures, otherwise scarcely noticed by the eye, become stalking ghosts whose heads are lost in ether. Villages, far buried beneath the convexity of the earth's surface, are seen hanging reversed in the air, and should any small river with its boats be flowing there, all the shifting scenery would be presented in the clouds; the white sails, greatly magnified and distorted, having a truly spectral appearance, as they hover silently by. The effect of a mirage is greatly enhanced by the use of a telescope, which, without unravelling the mystery, brings nearer the objects, each in its proper hue, and greatly increases the beauty of the exhibition.

One spectator thus describes what he saw in Tirhoot:—"Every object in sight was rendered five or six times its ordinary size. The men and cattle appeared gigantic spectres, stalking about in the distance; a few of them appeared as if walking on stilts; while some of the buffaloes' heads seemed larger than their bodies. A few were elevated to such a height, that their legs appeared like the trunks of palm trees. These distortions continued to change as the objects moved about, to such a degree, that the men and cattle changed their shapes every moment like shadowy spectres."

PARHELIA OR MOCK SUNS.

A dense black cloud (cumulus) of a large size, forms between the setting sun and the spectator, when suddenly there appears on the upper edge of the cloud four parhelia or

mock suns, exhibiting the most brilliant colors of green, blue and scarlet intermingled, which neither pen nor pencil can describe. The upper part of the cloud is fringed with radii or small innumerable black rays, shooting upwards, with a slow but perceptible motion. Sometimes the phenomenon appears when the sun is rising. Captain Sherwill saw a very beautiful one at Darjeeling which he thus describes :—



"The weather at Darjeeling had been for the whole previous fortnight a succession of heavy showers, fogs and bad weather, but the morning of the 21st May 1852 was the commencement of a bright sunny day: the power of the sun, when the luminary was at an elevation (calculated) of 17 deg. 34 min. was considerably dimmed, shining with a pale subdued light through the frozen mass of clouds in front of it; around the sun appeared a magnificent corona with a diameter of about 17 deg. and nearly a complete circle, 300 deg. of the circle being visible, the remaining 60 deg. being occupied by a gap where the corona appeared resting on the summits and sides of the eastern snowy range, down whose slopes the ends of the corona dissolved and lost themselves. The corona was composed of two colors, violet on the edge nearest to the sun, and red on the outer edge, the two colors blending together and forming a neutral tint in the middle of the corona; the order here observed with regard to the colours is similar to that observed in the rainbow.

"The true sun was flamed on either side at the distance of 11 deg. 45 min. by a parhelion or mock sun of a pale unrefracted light at equal altitude with the true sun, each parhelion forming the head of a segment of a circle, with a radius of 23 deg. 30 min. the segments of the circles attached to the parhelia hung as graceful curving fringed appendages converging to a point below the true sun. The parhelia were equal in size to the true sun, and were equi-distant from the corona and true sun. Above the true sun was a segment of another circle with a diameter of 47 degrees and distant about 11 degrees from the true sun, the concave side or the side away from the sun, was beautifully fringed with prismatic and violet coloured rays or tongues of moving light, the sharp extremities of the moving rays pointing and flickering upwards.

"The main corona from its great size presented a magnificent object, and its prismatic colours were most brilliant, almost as brilliant as the colours of the true rainbow. Contrary to the custom of rainbows which places the spectator between the bow and the sun, and which enables the spectator to gaze upon this beautiful object in the heavens, with undazzled eyes, his back being turned towards the sun, the corona and parhelia are always between the sun and spectator and thus from the glare of the sun, much of their beauty is lost.

"This grand picture lasted about a quarter of an hour, and was succeeded by heavy rain at Darjeeling, and a fall of snow upon the higher and neighbouring peaks."

FOG BOWS.

Captain Sherwill saw one on the 21st September 1852, at Darjeeling. The spectator sees his figure about thirty yards in front of him, surrounded by a disc of a greyish, pinkisk neutral tint, with a diameter equal to his own height, but with the head exactly in the centre; beyond this central disc are three circles, and from the outside of the yellow circles long pencil-like rays of neutral tint or grey colour radiate in all directions, spreading and increasing in size in proportion to their distance from the centre, until lost in the surrounding haze.

"On the 21st September 1852, at 6-45 A.M. thermometer 62, the heavens to the east were overspread with fleecy cirro-cumuli at an elevation of five miles; beneath the cirro small light and transparent cumuli occupied a lower region at a probable elevation of 10,000 feet. Upon the frozen clouds above and a little to the south of the sun, there was projected a portion of an arc whose radius might be 35 deg.

of the most brilliant and vivid colours, the edge from the sun being yellow, and the edge nearest to the sun red; the intermediate space being occupied by a combination of all the prismatic colours, not a perfect amalgamation of the colours, otherwise the colour would have been white, but small particles of each colour appeared sparkling and wavering like the colours seen upon the inside of a pearl oyster shell.

At the lower edge of the main segment, a distorted but very brilliant corona was joined to it an angle of 35 deg. This latter corona was about one-half the width of the larger segment, but much longer and with a similar arrangement of colour. Its shape, which resembles an S, threaded its way amongst the small cirro-cumuli of the back ground.

The spectator sees his figure about thirty yards in front of him, surrounded by a disc of a greyish, a pinkish neutral tint, with a diameter equal to his own height, but with the head exactly in the centre; beyond this central disc which is edged on the outer circle of colours, viz. violet, yellow, orange, their width bearing the correct proportion as ascertained by the prism, viz. the violet eighty parts; yellow forty; orange twenty-seven; the three circles occupy three semi-diameters of the central disc; beyond this first series of circles another series is visible, observing the following arrangement of colours; violet, green, yellow, orange, the circles being much broader than those in the first series, the

brilliancy of their colours much fainter and rather confused. Beyond this second series of colours a colourless or white bow is sometimes seen with a radius equal to six semi-diameters of the inner or first series of colours, viz. from the centre of the disc where the spectator's head is reflected, to the exterior of the first orange colour. Depending from the shoulders of the spectator is a dark neutral tinted pyramidal shade, resembling a flowing garment, occupying about 72 degrees of the central side.

LUNAR IRIS.

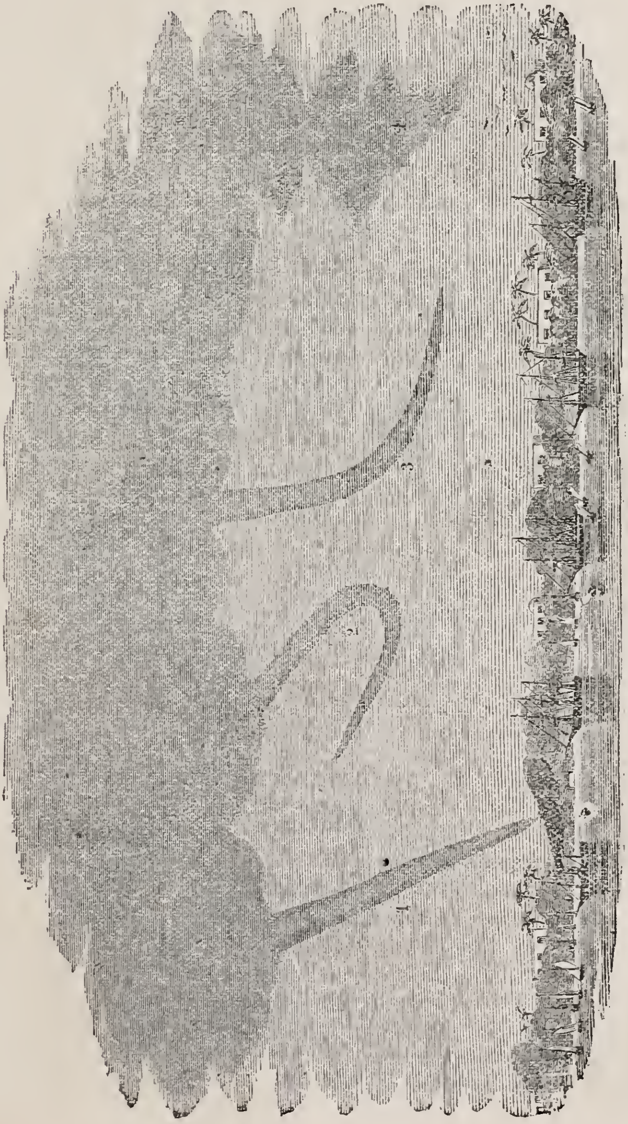
The lunar iris is another wonder but is not confined to India. A traveller thus describes this phenomenon—"It appeared in the eastern part of the sky, the moon being in her last quarter, and only a few degrees above the western horizon. The prismatic colours were distinctly developed, and the arch perfect, though not so intense as those generally seen in the solar iris. The radius of the arch appeared also less than the one formed by the sun. It remained distinctly visible for the space of 15 minutes."

THE BORE.

The singular phenomenon of the bore, which occurs in the river Hooghly, three days before and three days after the full moon during the rainy season, in somewhat similar to the Eger of the Severn. It occurs when the tide is almost run out. At first, a distant indescribable sound is heard, and then a low hollow murmur which increases as it approaches nearer and nearer, gradually swelling into a roar. From man to man, from boat to boat, a shrill warning cry is conveyed up the river—"Take care the bore is coming." In the distance is seen a line of foam passing the bend of the river, and stretching across from bank to bank. As the wave approaches, the shouts increase, and the boats shove off from shore, and pull for the centre of the river, where the wave is always lowest. Keeping head up stream, the rowers pull gently, so as to give the boats a little impetus in the direction in which the wave is advancing. On it comes, roaring, rushing along the shore, smashing with irresistible fury everything left within its reach, and rolling the fragments of wreck over and over. The moment it reaches the boats they are canted up in the air, and such as are not properly steered are swamped and swallowed up by the swiftly flowing stream. Continuing its course, the bore passes on filling the channel from bank to bank, and leaving a dozen poor wretches swimming for their lives, and bewailing their imprudence in not pushing off in time.

WATER SPOUTS.

Though waterspouts are not peculiar to India, but may be seen at sea in all parts of the world, we give below the sketch of some strange appearances of the waterspout as seen at Calcutta, on the Hooghly, by a gentleman on a day in 1849 :—



FALLING FISH.

The phenomenon of fish falling from the clouds in the rainy season, however incredible it may appear, has been attested by such circumstantial evidence, that no reasonable doubt can be entertained of the fact. The first instance we see recorded is that of a fall which happened at the Nokulhutty factory at Dacca, and another shower took place near the Surbundy Factory, Furreedpore, both in 1830. Since which several instances are noticed in the papers of later dates. This phenomenon is of easy explanation. The fishes, 8 or 10 inches in length, are swept up by whirlwinds from ponds, and held suspended in the rain cloud until they are thrown down in showers. The curious part is, that the fishes are found on the ground alive and uninjured.

NATURAL CAVERNS.

Among the many natural curiosities to be found at Puchmurree is an arched cave, sacred to Mahadeo. It is about one hundred feet in length, and twenty in height, and is a natural excavation at the bottom of an immense solid rock. It is situated in a deep narrow dell, and the surrounding rocks are from 150 to 200 feet above the level of the cave. The floor of this cavity is covered with water about knee deep, which is the effect of a constant dripping from the roof, but for which it is difficult to account, as the upper surface of the rock is perfectly dry, and as there is no water visible anywhere near it to supply the perpetual filtering.

At the distance of about three hours' walk, in a north-east direction from the bazar of Pundua, and at an elevation probably of six hundred feet above the adjacent plains, is the wonderful cavern of Booban, in one of the lower ranges of the Cossya mountains, near Sylhet. The mouth of the cavern, which is found in the face of a limestone mountain, is not in itself remarkable, neither do any external circumstances indicate the existence of the vast hollows to which it affords access. The aperture is small, its dimensions precluding the intrusion of more than one person at a time, and the entrance is completed by a scrambling descent of about thirty feet over stones and masses of rock to a comparatively level space. By the aid of lighted torches it may be here seen that the cavern has already expanded considerably, and that its sides are covered with numerous stalactites, crystals, and petrifactions, all, however, of the limestone family, of which rock alone the cavern is entirely formed. The passage here is about twelve to fifteen feet in width, and the height varies from about twenty to forty feet. In advanc-

ing, this latter dimension of the cavern is found to vary greatly, sometimes increasing to seventy or eighty feet, and at other, diminishing to ten or twelve, the breadth, however continues nearly uniform. These remarks apply solely to the branch which appears to have been always followed by the few Europeans who have visited the cavern, and which has been explored from the entrance to the distance of about a mile, where a steep and wide cavity fills up the whole breadth of the passage, and presents an obstacle to further ingress, which, owing either to want of time or proper conveniences, no one has yet surmounted.

The situation of the dripping caves of Sansahdara is north-east seven miles from Dehra. The first appearance of the caves is very grand. The numerous and fantastic petrifactions formed at, and overhanging the entrances, have a dazzling appearance if viewed when the rays of the sun are striking on the drops of water, which are incessantly falling; thus seeming to form "a glittering screen to the wonders within." After proceeding six or seven yards within the caves, the excavation appears terminated, but with the assistance of lanterns (the tops of which are covered with oil skin, to prevent their being extinguished by the continued droppings) we succeeded in discovering (where the depth of water was 4 feet,) a passage of about 2 feet above the water and 4 feet in width; with some difficulty we passed to another cave of considerable magnitude, the dimensions of which, however, we were unable accurately to ascertain by the dim light of our candles, all external light being excluded. On searching through this, we discovered a passage similar to, but somewhat longer than the former, and which in like manner, led us to a third cave. In this, however, we were unable to remain many minutes, the water falling so heavily as to extinguish the lights, notwithstanding the precaution we had taken to prevent it, and the sulphurous fumes being almost intolerable.

There is at Gya a wonderful cavern, which is thus described. It is situated on the southern declivity, and about two-thirds from the summit, of a hill or rather rock, about 14 miles north of the ancient city of Gya. It has only one entrance, two and a half feet in breadth, and six feet high. This leads to a room of an oval form, with a vaulted roof, forty-four feet in length, eighteen and a half feet in breadth and ten and a quarter in height at the centre. This immense cavity is dug entirely out of the solid rock, and is without any ornament. The date when and by whom excavated, are lost in obscurity; it is supposed by some to have

been excavated in the 590th year of the Hijree, but of this there is nothing certain.

REMARKABLE WATERFALLS.

Few Europeans have an idea of the vastness and grandeur of the falls, which are to be seen in India; some of them are greatly superior to the far-famed Niagara.

The Courtallum falls in Tinnevelly, are not by any means the largest; the following is a description of the third fall:—"At Courtallum the gneiss rises up regularly before the course of the river, the laminæ being quite horizontal, and the outward appearance of the rock somewhat rotund. Over this, then, comes the roaring torrent; its descent is obstructed by a projecting segment of the rock, but it bounds off and descends foaming into the basin below, forming in its descent altogether a magnificent fall of 150 feet."

But this is one of the minor falls. We shall now proceed to some of the more gigantic of which the Cauvery falls are to be found in the Mysore province, at a place called Sivasamudrum. The traveller journeys from Bangalore to Muddoor, a distance of 47 miles, and thence to the falls is about 28 more. The chief falls are named respectively, Gunga Chooka, and Bar Chooka. The height ranges from 150 to 200 feet, and their breadth varies from a small cleft in a rock, to a wide chasm left by a mass of stone that has been hurled into the foaming abyss beneath; while at heavy floods they extend across the whole breadth of the stream. In some parts, and more particularly in the Gunga Chooka falls, torrents of water drop over an abrupt precipice of some two hundred feet in height, spreading as they fall, and simulating the tail of an untrained Arabian steed. At others they descend in less graceful, but more mighty volumes, and resemble great heaps of cotton wool being tumbled into a press.

A description of the falls of Gairsoppa, in North Canara, appears in a Madras paper; they are represented to be the grandest in the world:—

"The falls are situated at the distance of a mile to the west of a small village called Kodakainy, which forms the boundary of the Bilghy Talook, in North Canara, and lies contiguous to the Sagara district of Mysore, receiving a continual supply of water from twelve streams, which conjoin, as the name implies at Baringee, in Mysore; five of these pursue their course, from Ramachendapoorah; four from Futty Pettah, or the town of victory, so named by Hyder; and the remaining three at Koodolee; and after being pre-

cipitated down the cataract, and then gently winding the current through a rugged way, which it had forced through the base of the mountains at the verge of their declivity, widens at Gairsoppa, and forms a beautiful river, called Sarawati, navigable for sixteen miles for boats to the town of Honore, where it falls into the sea.

"The solemn silence that pervades the thicket in our approach to it threw a lambent gloom on the mind; the noise, however, of the waterfall, bursting suddenly on the ear, soon enlivened our anticipations; but here again a momentary disappointment supersedes these eager expectations, for standing on the bed of the rocks, not thirty feet distant, the eye can discover nothing to awaken amazement; a few steps however, nearer, the stranger is so overwhelmed with the immensity of the dread abyss, that he requires some seconds to collect himself before he gets sufficient courage to make the attempt to examine the awfully grand view that presents itself beneath him,—he feels as if he were looking into the brink of eternity; nor is the situation in which he is compelled to be seated to enjoy the sight less strikingly perilous; he has also to lie down horizontally and look perpendicularly over a projecting rock at the very edge of the immense basin, into a descent that the eye can scarcely fathom from its profundity, and beholds a dreadful chasm hollowed out by the weight of the dashing torrents, which cause to ascend from the white spray that they form below, volumes of vapour, which, rising into the atmosphere, mingle with the clouds above the highest mountains in the neighbourhood, and buoyant upwards borne, would rather seem to be the smoke of Ætna's fiery bowl, than the subtle extricated particles from the whirlpool of an equally dangerous element. The spectator sees the heavenly bow with all its prismatic colouring and splendour, reflected downwards through the salient aqueous globules athwart the surface of the unfathomed gulph, in the perfectness of the mundane semi-arch.

"I should imagine the circumference of the crater, which is shaped like a horse shoe, to be about a quarter of a mile. Five separate bodies of water are hurled down this stupendous pool, the largest, at the N. E. angle, tumbles perpendicularly with its foaming current from the edge of the river, already described, clear to the bottom, in two distinct columns. At the next curve, and facing the position where we had a bird's-eye view of the whole, another large mass is seen to be propelled headlong; then aslant the hollow channel it has formed, and gradually enlarging its surface in its descent, buried in the boiling depth in union with the other.

A more gentle rill, passing immediately over the second fall, makes a striking variety to the rush of its noisy neighbours. The fourth cascade is more distinctly observed, without the same exertion, in its southern direction, skirting the rocky steep of this enormous basin, and being expanded by the obstruction it meets from some projecting irregularities of stone. The depth of the fall I calculated to be about 1,030 English feet, as far as I think it possible to ascertain it with any degree of accuracy.

"The falls of Niagara, of the Montmorency, the Missouri, and Tuccoa, are remarkable for the vast expanse of the falling sheets that are precipitated down them ; but their height, in proportion, is insignificant, with the exception of the first; neither do the celebrated falls of Gocauk, in Bijapoor, or that of Courtallum, in the district of Madura, exceed 200 feet in their descent; from which comparison it may be seen that those of Gairsoppa are not unworthy of being recorded among the wonders of the world."

HOT SPRINGS.

To the north of the village of Bheembaudh, at the foot of the hill Dumduma, Kurruckpore hills, is a region of hot springs; hot water appeared to be spouting from the ground in every direction. The principal springs, of which there are eight or ten, have a uniform temperature of 145 degrees, all rising within a space of about 300 yards square. At the source of the Bheembaudh hot well, at the foot of the Mohadeva hill, the water is 147 degrees Fahr. In this temperature nothing appeared to grow or live. From 130 to 125 degrees shrubs, trees, grass and ferns grow indiscriminately on the edge of the water, into which they push their roots. At 114 degrees large shoals of a very small and active silvery fish, apparently enjoy their hot life, but being driven up the stream into a higher temperature, they dart about wildly ; at 119 degrees they die instantly, for at this temperature they turn on their backs, their air bladders bursting a few seconds afterwards. Frogs swim about in 114 degrees. Luxuriant crops of rice are raised by the aid of the hot streams, large fields being fed by the water, but at a reduced temperature, by leading it in devious courses to the cultivated land.

Ten miles west of Soory, the capital of Beerbhoom, and one mile south of Tantipara, on the banks of the small stream, the Buklesur, is a group of hot springs. The whole group is named Bhum Buklesur ; the hot springs, that have been surrounded by masonry, five in number, are immediately on the right bank of the stream which winds abruptly at the spot. Numerous hot jets are in the bed of the stream, giving

out the well-known smell of sulphuretted hydrogen gas, with which the air is tainted. Extending for about 200 yards, along the right bank of the stream, are 320 small brick and mortar Viharas or temples built by various pilgrims, each containing an emblem of Mahadeo. Only one temple has any pretensions to architectural elegance, and that is one resembling in form the old Buddhist temples of Gya and of Central India. These small temples have various Nagri and Bengali legendary stones let into their walls, announcing the pilgrim's name and the date of his visit to Buklesur.

The temperature of the hottest well at noon, on the 28th December 1850, was 162; the coolest 128; temperature of the air in the shade 77 Fahrenheit; temperature of the stream above the influence of the hot springs was 83. Shoals of small fish were observed in the cold water.

There are several cold springs in the vicinity of the hot ones, the whole flowing from out of crevices in a tough gneiss rock composed of glassy quartz, pink felspar, and black mica. The sand of the stream, some way removed from the hot springs and at the depth of 6 inches, is to the hand intolerably hot. The body of water ejected from the hottest well is very considerable, being about 120 cubic feet per minute; it rises from innumerable small orifices in an accumulation of mud and dirt, the rock being nowhere visible in the masonry tank. In the hottest water (162 deg.) a green shining conferæ was thriving.

In one of the reports of the Medical and Physical Society in 1827, we find an account of some mineral springs in the Bengal Presidency. The first was the hot springs near Hazareebagh:—"This water is strongly impregnated with sulphuretted hydrogen, and holds in solution muriate and sulphate of soda. The spring arises at the foot of the table land of Hazareebagh, about twenty-seven miles to the north of the Grand Trunk Road. There are four springs, but only two of them of a remarkably high temperature, raising the thermometer to 170 and 190 degrees. The fumes of suphuretted hydrogen rise most profusely from the last." The second series of hot springs are at Jubbulpore, in the valley of the Nurbudda, at the northern base of the Mahadeo hills and known by the name of Anhoni Simoni; "they are much resorted to as a place of pilgrimage, and bathing is performed in them, but rather as an act of worship than for medical purposes. The westernmost of the two is the only one in which ablution is practicable, and in that the water is too hot to permit a person to remain immersed in it for more than a minute or two. The eastern spring is almost too hot for the hand to be dipped into it. A sort of reservoir has been constructed at each. At a short distance arises a cold spring."

CAVES OF ELEPHANTA.

The celebrated caves of Elephanta are situated in the island of the same name, called by the natives Gara-pori, lying in the Bay of Bombay, about seven miles from the Fort. These caves form one of the most favorite resorts, for pleasure and picnic parties; the sail across the bay, the cool-

ness and seclusion of the caves, combining to render a trip to them most enjoyable. It has been thought by many, judging from the nature of the statues that are ranged along the sides of the cavern, to the number of some forty or fifty, and which although standing prominently forward are not detached from the main rock, and from the religious symbols which meet the eye continually, that these caves are not of so remote an origin as tradition would have it. Until however, they are more closely investigated they are likely, among the natives at all events, to retain their reputation of being many thousand years old. The entrance to the large cave, suddenly meets the visitor's eye after a steep ascent of one hundred stone steps. A lovely view of the bay beneath and the distant hills is obtained from the summit. The interior of the large cave is about 130 feet long and 135 feet broad, and originally rested on 26 pillars and 16 pilasters. Several of these however have given way. They are about 18 feet high, and carved out of the solid rock, some few of them still retaining ample evidence of no unskilful hands having been employed upon them.

DUST STORMS.

Dust storms, though unknown in Bengal—except by the appellation of "Nor-Westers"—which however, are widely different in their nature from proper dust storms, are of almost weekly occurrence in the North Western Provinces, and the Punjab—during a considerable portion—especially the warmer months of each year; and their origin and composition have long been matter of grievous uncertainty. Here is a description of one:—"At first but a speck on the distant horizon, it rapidly elongates, until it stretches from east to west—a mighty threatening wall, about one thousand feet in height, and thirty miles in length. Nearer and nearer it comes phantom-like, its rushing noise being as yet inaudible to the spectator. Now one wing is pushed forward, now another; nearer still; and now the birds—kites, vultures, and a stray eagle or two—circling in its front are visible, and one by one the villages in its route are enveloped and hidden from the eye: a few seconds more, and the summit of a hill, till then bathed in sunshine, and sleeping in the sultry stillness of the June morning, is shrouded in yellow scudding clouds. Vanished is the grandeur of the scene in a moment, and nought remains but a stifling begriming dust, flying and eddying about in all directions, penetrating everywhere. Outside, nothing can be seen but a darkness which can be felt, and nothing is audible but the whistling of the wind and the flapping of the bungalow chicks; but, inside, the lamps are lighted, and a quarter

of an hour is idly passed, until the storm, which generally expends its fury subsides, or passes on."

Dust storms are of two kinds: (1) the smaller dust whirlwinds, which in spiral columns traverse the country in a rapid rotatory course—and are, in general, harmless: and (2) the wild, rushing, wide-spreading clouds of dust, which darken the atmosphere—sprinkling the whole country with minute particles of dust, and by its violence, tearing up trees, and causing great destruction both to property and cattle.

Dust storms appear with great regularity between 10 A. M. and 4 P. M., increasing in frequency with the heat of the day, and declining as the sun approaches the western horizon, ceasing altogether before sunset. The violent dust storms are supposed to commence at the foot of the hills, and their rate of travelling varies from four or five miles to as much as eighty miles an hour. Evaporation is much increased when the whirlwinds are frequent and the wind brisk. When whirlwinds are moving about white patches of cirro cumuli are frequently seen on the clear blue sky, exactly resembling flakes of teaseled cotton, having rotatory motions throughout, forming and then rapidly dissolving or ascending with whirling motions into the higher regions, becoming more and more faint as they recede from the sight.

An officer has favored us with his observations of the effects produced upon an electro-magnetic battery in action during the passage of a dust storm at Cawnpore. These notes are too extensive for us to give in extenso; we shall simply state that the amount of electricity thrown off by the storm was very great, much more than is generally supposed to be. One circumstance and an extraordinary one too, noticed by the same writer during a dust storm, we cannot forbear mentioning. It occurred during a march towards the Punjab. The regiment to which the officer belonged was caught in a dust storm which was succeeded by very heavy rain and vivid lightning. When the rain fell the tips of the men's bayonets and the peaks of the officers' caps were seen tipped with that well known electrical appearance, called St. Elmo's light, and this appearance continued for some minutes—a quarter of an hour perhaps.

LIGHTNING IN BHOOTAN.

In Bhootan "lightning does not descend from the clouds as in Bengal"—so says Kishen Kant Bose, in an account of that country, published in the *Asiatic Researches*—" but rises from the earth; this was not actually seen, but the holes in the earth were inspected, and it is universally

reported to be the case by the inhabitants. In Bhootan it never thunders, nor do the clouds ever appear of a black color, but merely resemble mist; the rain which falls is also exceedingly fine like our mist."

MOVING STARS.

Four officers who have given their names, attest to having been witness to this phenomenon; and we therefore must accept as fact what we might otherwise have treated as an illusion of the imagination:—

"One evening during April 1852, an hour and a half after sunset, the atmosphere being perfectly clear, and without clouds, and no moon shining, a little haze only, low in the horizon, three of us, Lieutenants Machell, Turnbull, and myself (McLeod), saw a star in the W. move and undergo sundry eccentric motions. When first noticed it was at an elevation of about 12 deg. above the horizon, and its direction from us was about W. 10 deg. S. We imagined it must be an optical illusion, but each of us then looked at it from a fixed position, and brought it on a line with some fixed object. The star sometimes dropped down some distance and went off in a zig zag direction, then rose again, and at times remained stationary. It also varied much in brilliancy and in color, sometimes becoming quite bright, at other times scarcely perceptible. When it approached the horizon, we generally lost sight of it altogether, which may possibly be accounted for, by its getting obscured in the haze. The star once or twice moved to the right; but during the half hour we continued to observe it, it had moved considerably to the left of our position, or to the south, over a space of 8 degrees or more. It described no regular motion, and went off by fits and starts, and varied from its original position in the heavens considerably, as I tested by forming a triangle with it and two other fixed stars. Its velocity too was different at different times."

A still stranger phenomenon was noticed by Dr. Baddeley, and others, at Lahore, which was nothing less than the eccentric movement of the planet *Saturn*. A similar movement of *Sirius* was noticed on the continent in 1851. Hence, it will be apparent that a new era has dawned on astronomers. The following is what Dr. Baddeley observed at Lahore, not once, but frequently in company with others, who confirm his statement:—

"At Meean Meer, near Lahore, on the night of the 10th September 1852, about half past nine, the atmosphere being

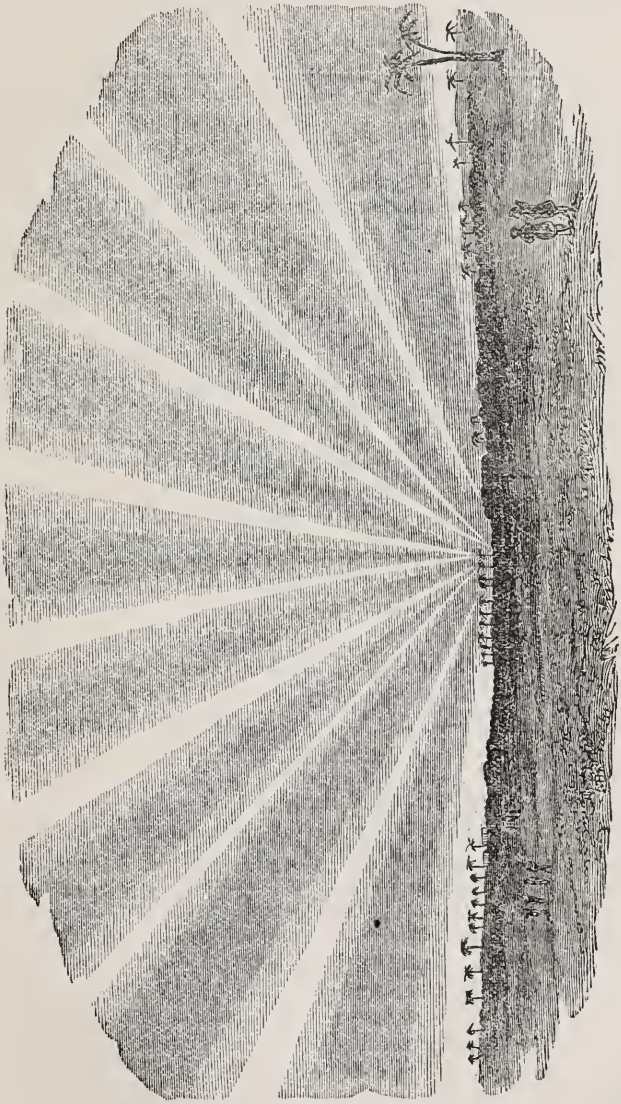
perfectly clear and no moon shining, I observed the planet Saturn, then about 12 or 13 degrees above the horizon to the E. in motion, and watched it for nearly two hours, undergoing sundry eccentric movements. It was seen to move up and down, to the right and left, obliquely, in a horizontal line, sometimes with slow wavy motions, at other times with a circling movement, now lingering for some seconds, or remaining stationary for a longer time; preserving notwithstanding the apparent changes, its general position in the sky, and all the movements being conducted so leisurely, that it was easy to follow them. A fluctuating movement was also perceptible, occasionally, suggesting the idea of a luminous body being drifted by a current. The planet seldom shifted more than 2 or 3 degrees from its general position in the ecliptic, though at times it seemed to move further, but I was unable to determine this point. No marked change was perceptible in its appearance during the movements; but it was noticed that the movements were much less remarkable than at first.

"Some minutes after my attention was first attracted to the phenomenon, I was joined by Lieutenant Carnegie, and we both sat watching the star for nearly an hour. I next turned my eye to a fixed star, shining with considerable brilliancy 12 degrees above the horizon to the N. E., and discovered that it was affected much in the same manner as the planet; and that it underwent increase and diminution in size and in the resplendency of its prismatic colors as it rose and sunk. Having satisfied myself here I turned to the opposite quarter of the sky, and found that two or three of the brightest fixed stars thereabouts seemed to move. I afterwards remarked a fixed star with a reddish tinge, (Regulus ?) which rose in the east, sometime after Saturn, when it had attained to the height of 10 or 12 degrees above the horizon, undergo precisely the same kind of motions.

"On the 13th, a similar appearance was observed. Shortly before 9 P. M. the sky being clear, a fixed star (Arcturus ?) 12 or 15 degrees above the horizon to the west, was observed, by myself and Lieutenant Carnegie, to move and undergo the same kind of irregular movements as before described :—and the following morning, at dawn, I observed the planet Venus, then above 33 degrees above the horizon to the east, to be affected in like manner; and now that my attention is directed to the subject, I perceive the phenomenon, with more or less distinctness, on every clear night; and it only astonishes me that it was never remarked before."

DOUBLE REFLECTION.

" One evening in the rainy season, or during July 1850, at Berhampoor in Bengal," says Captain W. S. Sherwill,



" I witnessed a beautiful appearance in the eastern heavens

caused by double reflection of shadow from a mass of cumuli that was surrounding the sun during the time of his setting. I have in Bengal frequently seen small and partial reflections of lengthened shadows, projected from west to east or right across the heaven, but never such a complete picture as the present group of reflections.

"As I said before, the sun was setting thoroughly encumbered with heavy massive cumuli of the most gorgeous colors and proportions; wherever an opening offered itself between the clouds, there bright fiery rays of light shot forth illuminating the landscape with those brilliant tints so well known in Bengal during the S. W. Monsoon; the heavy clouds between which these bright rays of light struggled, cast deep indigo colored rays of shadow, that gradually expanded as far as the zenith, and then contracted to a converging point on the eastern horizon immediately opposite to the sun. The rays consisted of two pairs of primaries, or rays that extended across the 180 deg., or from west to east; between these primaries were five inferior rays, or those that starting from some intermediate position above the western horizon did not reach the eastern horizon, but hung suspended between the primaries, the whole pointing to the same spot; a point immediately on the eastern horizon.

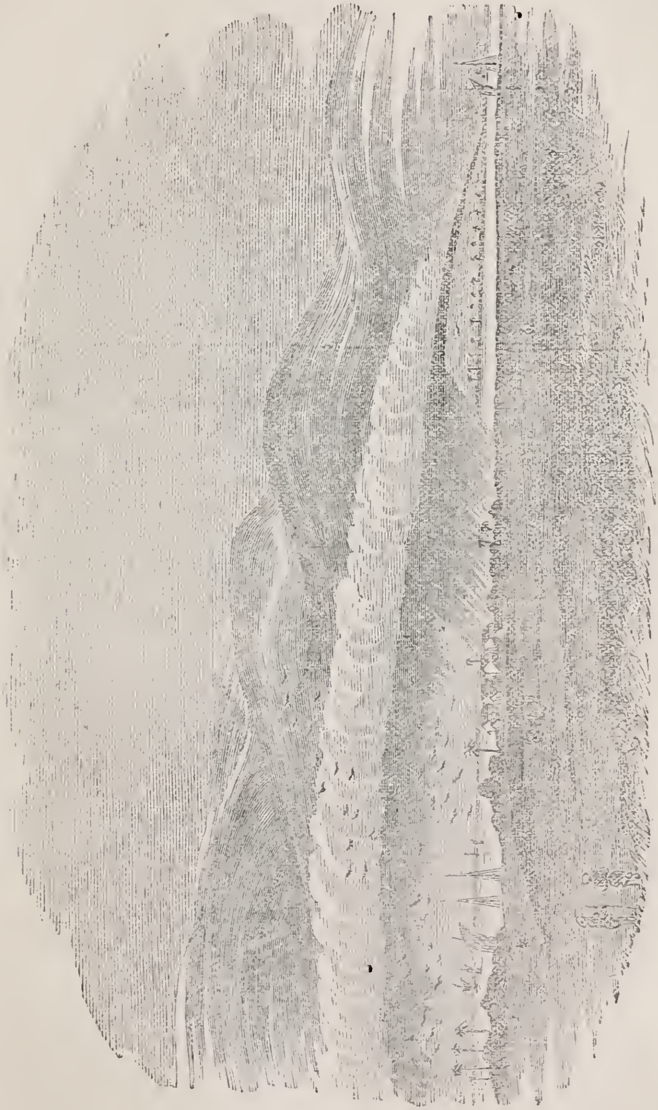
"The whole heaven was in a warm glow of light, and from the east such a flood of light was reflected as to cast a bright sunshine into houses facing the east, causing the extraordinary phenomenon of clear and well defined shadows to be projected upon the walls facing the east, or in a contrary direction to the setting sun; thus to any casual observer it appeared as if the sun was setting in the east."

THE STORM ARCH.

The nimbus, generally the least pleasing or interesting modification of clouds to the eye, is often of great beauty in India; especially when, fully charged with electricity, it is seen spanning the landscape as a dark menacing arch.

When the rains are threatening to set in this dark blue arch may be seen advancing at a rapid pace from north to south. Immediately surrounding the dark arch is a formal and stiff ruff of white curly clouds, whilst from the dark arch depend innumerable moveable points of cloud, gyrating like water-spouts, evidently seeking some object upon which to discharge their superabundant electricity; above the white clouds rest a heavy and dense mass of soft looking, rolling

surging clouds of a pale grey color. It always happens that these storm arches are attended with very heavy rain, and



oftentimes by powerful blasts of wind, that uproot trees and do great damage. The appearance when approaching the spectator is terrific but very grand.

CHAPTER XI.

NECESSARIES OF INDIAN LIFE.

BEER.

THAT beer was brewed by the sons of the Church so far back as 1295 we have positive proof from a document now extant, in which it is stated that Matilda, daughter of Nicholas de Shobenhale, released to the Abbot and Convent of Burton-on-Trent certain tenements and interests within and without the town; for which release they granted her daily for life two white loaves from the monastery, two gallons of conventual beer, and one penny, besides seven gallons of beer for the men, and other considerations. But long before even this date the Abbots of Burton were well known on account of the excellent quality of the 'nut-brown' they hospitably put before their guests; and, according to Molyneux, the Abbots must have had their own maltings, as it was a common covenant in leases of the mills belonging to the Abbey property that the malt of the lords of the manor, both spiritual and temporal, should be ground free; and there can be no doubt that the trade of the malting was carried on on a very large scale in that remote period.

It is evident from this that teetotal ideas met with no encouragement from the mediæval Church; nor in the days of Elizabeth do modern notions appear to have made much progress. The unfortunate Mary Queen of Scots, in the midst of her troubles, seems notto have been oblivious of the attractions of the national beverage; for when she was confined in Tutbury Castle, the question was asked by her secretary, Walsingham, as to 'what place neere Tutbury beere may be provyded for her majesty's use,' to which came the answer from Sir Ralph Sadler, the governor of the castle, 'that beere may be had at Burton, three miles off.' Plot, in his Natural History, written two hundred years ago, refers to the peculiar 'chemical or natural properties possessed by the Burton waters,' from which, 'by an art well known in this country, good ale is made, and in the management of which they have a knack of fineing it in three days to that degree that it shall not only be potable, but is clear and palatable as one would desire any drinke of this kind to

be.' In 1630 the fame of the Burton ales had spread to the Metropolis, they being sold at 'ye Peacocke,' in Gray's Inn Lane, at that period, while subsequently, according to the *Spectator,* it was in considerable demand amongst the visitors at Vauxhall.

Upon the opening up of the Trent navigation by the Act of 1698, Burton ale, which on account of the previous difficulties attending land carriage was very rare in London, soon began to find its way in larger quantities to the Metropolis by sea; but at this time the sale was of a very limited character, the inhabitants of London being supplied by local brewers.

The history of Burton, as a beer producing town, commences more recently, although one Benjamin Printon, who in 1710, commenced business as a common brewer in Burton, with a staff of three men, laid the foundation of the great export trade it now possesses. The chief benefit that accrued to Burton by the opening up of the Trent was that which arose from the northern trade, the Trent connecting Gainsborough with Hull, and Hull with the northern ports. In 1748 a considerable trade had been established in the Baltic, the ale finding an especially ready sale at St. Petersburgh. The Emperor of Russia, Peter the Great, and the Empress Catherine, were extremely fond of the Burton ale, which in those days was high colored and sweet, and of very great strength especially suited to the Russian palate. Coming down to the year 1822, the only brewers we find named in Piggott's Commercial Directory are Samuel Allsopp and Sons, High Street (one of the earliest brewery firms in Burton, the brewery in High Street having been established by Mr. Benjamin Wilson, in 1740); Bass and Ratcliffe, High Street; Thomas Salt and Co., 160 High Street; John Sherred; Wilson and Allsopp, Horninglow Street; and William Worthington, High Street.

At this period the superior quality of the Burton ales, although appreciated on the continent, and especially in northern countries, had still but a small sale in London; but the restrictions placed by Government on the Baltic trade in 1822, caused the Burton brewers to turn their attention to the then increasing London trade, and what may be termed the new era in Burton brewing commenced from the above date. Up to this period (1822) the ale brewed at Burton was of that strong character then in great demand in the northern market; 'bitter beer' had not been discovered, or only brewed in small quantities. India Pale Ale or Bitter Beer was introduced by a London brewer

named Hodgson, who in the course of a few years had almost a monopoly in the Indian trade. But the Burton brewers, fore most amongst whom was the eminent firm of Samuel Allsopp and Sons, of High Street, after revising and improving their system of brewing, succeeded after much labor and anxiety in producing a pale ale capable of retaining its peculiar qualities in all climates; and from about the year 1825 up to the present time the Burton brewers have had the satisfaction of witnessing the gradual advance of their trade, until at length it has assumed colossal proportions.

Great Britain must always be the source whence British India is to be supplied with good wholesome malt liquor. Attempts have been made by the French, Americans and Germans to supply it, but it has proved to be quite unsuited to the Indian palate.

Previous to 1816 and 1817 the demand for beer in India was nothing compared with what it has become during the succeeding forty or fifty years; the pressing calls in 1821 for an increased supply, led Hodgson of London to enlarge his brewery, and induced some to enter into arrangements for monopolizing the market, this, as usual in such cases, ended in severe losses to all concerned.

So entirely dependent were the public upon this brewer, that he in a great degree regulated the price, and the quantity imported. Others who attempted to introduce their beer into the market were compelled to withdraw, having lost very considerably by all their speculations. For Hodgson when he knew that other brewers were shipping, sent out large quantities, and thereby reduced prices to such low rates, as to frighten his rivals from making second shipments. Having effected this, in the following years he had the market to himself, and prices rose occasionally, under the short supply, to 180 Rs. and even 200 Rs. a hogshead; he thereby made up for the sacrifice of the previous year, and effectually deterred others from prosecuting their speculations in this market. Another thing in his favor, and which operated for a long time, was the high repute in which his name stood for beer; so much so, that no other even of a good quality was bought by the retailers, as they could not dispose of it.

The commanders and officers of the Indiamen were untill 1824, Hodgson's best customers—his beer formed one of the principal articles in their investments; and it was customary for him to give them credit for twelve or eighteen months, if not for the whole amount of their purchase, or at least one half of it. But about this time he not only raised his price from £20 to £24, but refused to sell on any

terms except for cash, even to parties of unquestionable credit. This naturally drove many of his best customers to other brewers, but Hodgson and Co., confident of the power they had over the market, sent the beer out for sale on their own account: thus they in a short time became brewers, shippers or merchants, and even retailers. These proceedings naturally and justly excited hostile feelings in those engaged in the India trade at home, whilst the public in India, seeing at last the complete control which Hodgson endeavoured to maintain over the market, turned their faces against him, and gave encouragement to other brewers, who fortunately sent out excellent beer.

In 1825 and 1826 several brewers tried the market, and as the spell had been broken, met with liberal and fair encouragement. The most successful of them were Allsopp and Sons, Bass and Ratcliffe, Ind and Smith, and Charrington, with a few others; all of whom for many seasons sent out beer of excellent quality.

With respect to drinks, beer and porter were little used here in 1780 and succeeding years, these beverages being considered as the cause of biliousness. The favorite drinks were madeira and claret; cider and perry. Ladies drank their bottle of claret daily, while gentlemen indulged in their three or four bottles, and that at five rupees a bottle. A drink was in vogue called "country beer." It is thus noticed :—"A tempting beverage, suited to the very hot weather and called 'country beer,' is in rather general use, though water artificially cooled is commonly drank during the repasts; in truth, nothing can be more gratifying at such a time, but especially after eating curry. Country beer is made of about one-fifth part porter, or beer, with a wine glassful of toddy, or palm wine, which is the general substitute for yeast, a small quantity of brown sugar, and a little grated ginger or the dried peel of Seville oranges or of limes; which are a very small kind of lemon abounding in citric acid, and to be had very cheap."

Of hill beer now so generally drank in the upper provinces, we have a brief account in one of the Calcutta papers. There are breweries in Murree, Simla, Mussoorie, Solon, Kussowlie, &c. The brewing processes at these institutions, from the time the barley is brought in sacks to the brewery, to the time the beer is borne away from it in casks and cases, are in the main much the same as in England. Of course the Indian brewer has cares and responsibilities of which his European brother knows nothing; he has to do many things for himself which the other has agents to do for him. This

will be better understood when it is remembered that in this country there are no professional maltsters, that his hops are imported from England; and that he is practically his own cooper.

The consumption of hill-beer has become very large: an annual supply of several thousand hogsheads is taken by the Government for the use of the troops. The sale of Indian beer might be very greatly extended if it were possible to convey it from its hill brewery to the plains at a moderate cost; but the charges for land carriage being heavy, it cannot yet enter into competition with English beer at places so far removed from the localities where it is manufactured, as Calcutta, or even Allahabad.

The brewing begins in the hills about October, and finishes by April. The "prime October," is a good deal inferior to the February and March brewings.

ICE.

In Calcutta, where the ice house, erected by the munificence of the community for the American Tudor, used to be annually stored with shiploads of this refrigerating article, the want of good ice, so dreadfully felt during the hot and blasting winds of May and June in the upper provinces of India, was not known nor most distantly imagined.

The first ship load of ice from America was landed in Calcutta in 1833 as an experiment. Previous to this period and for some time after, ice was manufactured to a very large extent by speculative natives at Hooghly, situated on the bank of the river 40 miles distant from Calcutta, whence it was brought to the metropolis, and served to satisfy the appetites of the luxurious of those days. During the last few years the plan adopted at Hooghly has been with slight variations generally employed at every station of importance in upper India, and ice houses, or pits as they are usually called, form prominent objects, on account of their pyramidal shape, to the traveller on his way through the upper provinces.

In an advertisement of the "Assemblies" to be held at the Old Court House, in November 1787, we have an allusion to ice being obtainable at the entertainments. This ice was obtained from Hooghly till the opening of the railway enabled the restaurant proprietors on the lines to get the American ice from Calcutta.

Dr. Wise some years ago published details of the mode employed in the ice manufactory at Hooghly, these details we shall adopt with slight alterations, in our description of the mode of ice manufacture in India generally.

A piece of ground exposed on all four sides, or with its western side protected, is chosen and levelled, sometimes the soil is removed to the depth of two feet. This is done previous to the manufacturing season, so that the earth may dry perfectly.

The first operation when the general appearances of the sky foretell a frost, is to cover almost the whole surface of the ground with straw in sheaves or loose, to a considerable depth ; narrow paths alone being left between the different beds for the purpose of the workmen supplying water from jars sunk in the ground to the shallow unglazed earthen vessels, in which it is to be frozen. These dishes or plates were nine inches in diameter at the top, diminishing to seven and even five inches at the bottom ; they were an inch and a quarter deep. They were so porous as to become moist throughout when water was put into them.

During the day the upper layer of straw in the beds was occasionally turned up, so that the whole might be kept dry. Towards evening, the shallow earthen dishes were arranged in rows upon the straw, and by means of small earthen pots tied to the extremities of long bamboo rods, each was filled about a third with water. The quantity, however, varied according to the ice expected, which was known by the clearness of the sky and steadiness with which the wind blew from the N. N. W.

When the temperature of the air at the ice fields was under 50 Fahrenheit, and there were gentle airs from the northern and western direction, ice formed in the course of the night in each of the shallow dishes. Persons were stationed to observe when a small film appeared upon the water in the dishes, when the contents of several were mixed together and thrown over the other dishes. This operation increased the congealing process. The freezing commenced before or about midnight, and continued to advance in intensity until about two or three o'clock in the morning, when the thickest ice was formed. The freezing was frequently retarded in its formation during the night by the wind rising to a breeze about 11 or 12 o'clock ; by clouds, &c. ; and the ice in consequence did not begin to form until towards morning ; in such cases the ice was never thick. In the most favorable nights the whole of the water in the dishes was not only frozen, but a crust of ice adhered to the sides of the vessels both inside and out.

Seven or eight persons were allowed for each bed, who with semi-circular blunt knives removed the ice and water into earthen vessels placed near them, which were moved along

as they proceeded in their work. When these vessels were full, they were emptied by men employed for that purpose, into conical shaped baskets placed upon the jars between the ice beds, which retained the ice and allowed the water to flow into water jars. When the baskets were filled, their contents were conveyed sometimes to temporary ice pits, about six feet deep by four diameter, and lined with mats, till the evening, or at once to the large pits where they were stowed for future use. These pits consisted of circular holes in dry situations from ten to twelve feet deep, by eight or ten feet in diameter. They were well lined with mats, charcoal, straw, &c., and a substantial double chopper over. Notwithstanding all these precautions these non-conductors of caloric were not sufficient to prevent the influence of the neighbouring media, and a slow dissolution of the ice was the consequence.

CHAPTER XII.

MANUFACTURES AND PRODUCTS.

LAC.

Lac is a resinous incrustation formed on the bark of the twigs and branches of various trees by an insect, commonly called the lac insect, and known to entomologists as the coccus lacca. The incrustation is mainly formed by the female insects, which generally largely outnumber the males. Each of the females inhabits a cell, and the incrustation seems intended to serve as a nidus or protection for the ovum and for the larva after it has been hatched. As soon as she is completely covered by the resinous secretion which she forms, the female lays her eggs and dies. The young on being hatched work their way out through the body of the mother, eating the red substance with which the body is filled, pierce the resinous incrustation, and swarm on to the bark, to which they fix themselves by insertion of the beak or proboscis, and at once commence the secretion of lac. This substance produces the dyeing material called in commerce lac-dye. The best lac is produced at Mirzapore.

The thickness of the lac incrustations varies from half an inch to an inch in diameter. The branches are broken off from the trees by the natives, and in this state it is carried to market and is called stick-lac.

In manufacturing lac-dye or cake lac, the first process is to detach the coating from the twigs by means of rollers and by the hand. The grain or powder thus detached is placed under *dekis* or stampers, and triturated, water being liberally poured over it, the result being that the coloring matter passes from the grain into the water. The grain is then dried and stored for making shell-lac. The dye containing water is run off into a vat, and allowed to remain there till the dye is precipitated, looking like dark mud at the bottom of the vat. The surface water is then run off, and the precipitate placed in cloths, which are laid in frames about eighteen inches square, having compartments about one and a half inch square; the frames are fitted with loose tops and bottoms, to allow of compression. When the muddy matter is tolerably consistent, the compartments are

filled with it, and put into a screw press. The water is then expressed and the firm cakes placed on a clean floor to dry thoroughly, when the cakes are fit for the market.

Shell-lac is formed from the grain alluded to above, after the dye has been washed out. This is put into long bags, about two inches in diameter, and roasted by being placed horizontally in front of the fire, the bags being slowly revolved by the operator. The result is that a matter resembling golden colored sealing wax exudes from the bag and drops into a trough underneath. Close to the roaster is a cylinder of porcelain or other smooth hard substance, hollow and filled with some heat absorbing matter. The roaster twists the bag with his left hand, while with his right he wields a wooden ladle with which he mixes the melted lac in the trough, and then lifts a spoonful on to the cylinder, which should be inclined at a slight angle to the ground; a third person stands ready over the cylinder, holding in both hands a piece of bark or other substance adapted to the purpose, and with this draws down the melted substance in a thin coating over the cylinder. He then detaches the coating from the cylinder with both hands, and lays the sheet on one side, and re-covering his bark is ready to repeat the operation. The coating or leaf is golden colored and called shell-lac, and is now ready for the market.

In commerce there are three varieties of lac, known as stick-lac, seed-lac, and shell-lac. Stick-lac, as just stated, is the resinous substance gathered on the branches in its natural condition, and often containing the dead insect; this when chewed colors the saliva a beautiful red, and when burnt emits a strong agreeable odour. When stick-lac has been separated from the branches, &c. and coarsely pounded, the native silk and cotton dyers extract the red color from it by boiling it in water. The yellowish, hard, resinous powder which remains, has somewhat the appearance of mustard seed and is called seed-lac; this is sometimes melted together and called lump-lac; it is used by the natives to make bracelets, &c. Sheet-lac is prepared by putting a quantity of seed-lac into long cloth oblong bags, two men holding each end of the bag extended over a gentle charcoal fire, by which process the lac melts. When quite fluid each man twists the bag so as to force out the melted substance, and this drops upon pieces of the stem of the plantain placed beneath, the smooth and glassy surface of which prevents the lac from adhering. The degree of pressure regulates the thickness of the coating; at the same time, the fineness of the material the bag is composed of determines its clearness and transparency.

Lac has been known to the Hindoos for many ages. Their carpenters mix the crude substance with native spirit, which produces a strong colored varnish, which they use instead of paint for the woodwork of their houses, temples, &c. The beautiful glassy lacquer with which the Indian houses, &c. are covered is also produced from the same source. Indian lapidaries make use of lac as a vehicle for retaining the hard powders used in cutting and polishing guns. Coarse lac is used for making bangles or ornaments in form of rings for the arms of the lower classes of females, the best shell-lac being used in the manufacture of ornaments for the superior classes.

In Ainslie's "Materia Indica" it is stated that a tincture of lac is a favorite medicine among the Arabians in preparing cleansing mashes; they call it "meliawer." Also a decoction of stick lac in mustard seed oil, to which has been added a little powdered root of the *morinda citrifolia,* is used in Behar as an unguent for anointing the body in cases of general debility.

Lac is found in most parts of India; in the central provinces it occurs very extensively. It is also found in some of the countries of southern Asia, Siam, Ceylon, some of the islands of the Eastern Archipelago, and China. Siamese lac is held in high estimation.

COCHINEAL.

One of the best and most powerful animal dyes used in the arts and manufactures is the body of the female cochineal insect, dried. This insect exists on a species of cactus, and when alive is about the size of a lady bird, or perhaps a trifle smaller. It is wingless, rather long, equally broad all over, and is marked behind with deep incisions and wrinkles. It has six feet, which curiously enough are only of use, directly after birth, and secures itself to the plant by means of a trunk which is found between the forefeet, and derives its nourishment from the sap. The male cochineal is like the female only during the larva period. It changes into chrysalis, and eventually appears as red flies. The female deposits some thousands of eggs, which she protects under her body until they are hatched, and on the appearance of the young ones the parent dies. While the young are in the larva state their sex cannot be determined. They lose their skin several times, and while the female fixes herself on the plant, the male, after getting over the pupa state, is winged. Two or three months is the extent of the life of these little insects. They are gathered before they lay eggs and are then rich in coloring matter.

Carmine is prepared from the cochineal insect, the *coccus acti*, which is collected by brushing the branches of the cactus with the tail of a squirrel or other animal: this is very tedious work. They are killed by immersing them in boiling water, and this has to be done at once or they would lay their eggs and thereby lose much of their value. There are many processes for preparing the carmine. The French process may be taken as an example: one pound of the powdered cochineal insects is boiled for fifteen minutes in three gallons of water; one ounce of cream of tartar is then added, and the boiling continued ten minutes longer; then an ounce and a half of powdered alum is thrown in and the boiling continued for two minutes longer. The liquid is then poured off, and set aside for the carmine to settle down. In other processes carbonate of soda or potash is used.

DYEING KHARWAH CLOTH (a Persian account.)

To dye, say one bale of cloth, consisting of two pieces, the first step to be taken is to wash them white in water. Thirteen seers of oil of castor, three seers of impure soda (efflorescence on saline earth,) and fifteen seers of clear water, must then be mixed together, and the cloths dipped and drenched in the solution twice a day for four days continually. At the expiration of that time, the same operation is to be renewed for a period of seven days, soaking the same in the liquor, and reducing the operation to once a day. But care should be taken to put into it a little saline earth every day during the process. After this the whole bale of cloth must be re-washed in clear water, and then steeped over again in another liquid composed of water and three seers of *Halelah* (terminalia chebula), and afterwards dried. A similar cold solution of water and three seers of alum is then to be prepared, in which the stuffs are again to be steeped and afterwards well dried.

After all these operations are duly conducted, a caldron or large vessel is to be filled with a sufficient quantity of water, in which are to be mixed one maund and ten seers of *al* (morinda tinctoria), a dye wood, and five seers of *dhawa* (another wood.) The former should be well dissolved previously to the cloths being submitted to the process of dyeing. After they have taken a deep dye in this liquor, they should be taken out of the vessel, and then washed with soap and water. Then a solution of eight seers of gum is to be made, and the stuffs immersed and washed in it for the last time. They are afterwards to be folded piece by

piece, and rubbed and scoured with a little gum over their surface, and then beaten in order to make them smooth and compressed.

To dye cloths of a mango green color.—The cloths require first to be dyed in a solution of indigo ; the latter to be used at the rate of two chittacks on an average per piece. Afterwards they must be boiled in water with a mixture of rind of pomegranate in it. In this operation, half a seer of the latter should be mixed with each piece. They are then to be steeped in a strong solution of water and alum, which should be given in two chittacks on an average. After this, a preparation of two chittacks of turmeric dissolved in water should be made, and the stuffs kept dipped in the same for one whole night. The next morning they should be washed in clear water, and lastly dyed with the juice of *kusum* flower, (safflower) which when first extracted is naturally yellow. They are afterwards to be folded and beaten smooth.

To dye cloths of a red yellow color.—A composition comprised of ten seers of oil of castor, five seers of impure soda, one seer of goat's dung, to be mixed, and to be all dissolved in a sufficient quantity of water. Twenty pieces of stuff are then to be washed in pure water, in a vessel all separately, and one by one, changing the water every time. This operation is to be repeated daily for fifteen days. The stuffs must afterwards be washed in clear water, and soaked in a solution of alum and water. Twenty-five seers of powder of *al* (morinda citrifolia) should then be dissolved in a sufficient quantity of water, in a large vessel, and the cloths steeped and colored in the liquor. This is to be done daily for six days, when they are to be dried and folded. A seer is two lbs ; a chittack is one-eigthth of a lb.

SILK.

Silk has in all times been an article of the greatest importance throughout the ancient world. China gained its celebrity in the classical time of the ancients as the mother country of that mysterious texture called *se* or *ser.* It was this manufacture which made the satraps of the Western world, the rulers of Rome, and the emperors of Byzant envious of its possessions. But for a long period China enjoyed a far famed monopoly. At length the Emperor Justinianus got an insight into the secret from two Persian monks, who had brought the eggs of the Chinese silkworm in a hollow bamboo cane, safe over the icy chains of the Himalaya, the barren plains of Bokhara, and the

mountains of Persia to the distant Eastern capital. Justinianus endeavored to preserve the secret, but it at length began to disseminate.

Venice, in the time of Roger the 1st, became a wealthy people by the introduction of the silkworm into Palermo. The Venetians were enabled by the trade of silk chiefly, to build their immortal maritime bulwark, and in our days the introduction of silkworms and manufacture of silk are a source of wealth to the countries of Europe where the worm is bred on a large scale. Next to China there is no place in the world so adapted for the breeding of the worm as India. The insect is to be found in Assam, Cashmere, the Punjab and other parts, and the cultivation of silk has lately been greatly encouraged and restored by the Government.

The mulberry plant was introduced into Assam from Bengal, at what period is uncertain—and with the plant probably the worm. The plant does not grow in a wild state in Assam, and many silkworms, we may say nearly all, are reared entirely within doors, being fed principally on the *hera* or palma christi leaves. The Eria silkworm is at first about a quarter of an inch in length, and nearly black; as it increases in size it becomes of an orange color, with six black spots on each of the twelve rings which form its body. The head, claws and holders are black; after the second moulting they change to an orange color, that of the body gradually becomes lighter, in some approaching to white, in others to green, and the black spots gradually become the color of the body; after the fourth and last moulting the color is a dirty white or a dark green; the white caterpillars invariably spin red silk, the green ones white.

In four days after the formation of the chrysalis, the cocoons are complete. After the selection for the next breed is made, they are exposed to the sun for two or three days to destroy the vitality of the chrysalis. The hill tribes settled in the plains are very fond of eating the chrysalis. They perforate the cocoons the third day to get them, and few cocoons sold by them are unperforated.

The cocoons are put over a slow fire in a solution of potash, when the silk comes easily off; they are taken out and the water slightly pressed out; they are then taken one by one, loosened at one end and the cocoon put over the thumb of the left hand, with the right they draw it out nearly the thickness of twine, reducing any inequality by rubbing it between the index and thumb; in this way new cocoons are joined on. The thread is allowed to accumulate in heaps of a quarter of a seer; it is afterwards exposed to

the sun or near the fire to dry; it is then made into skeins with two sticks tied at one end and opening like a pair of compasses; it is now ready to be wove, unless it has to be dyed. The dyes used are lac, munjeet and indigo, and the process of dyeing is as follows :—

Red Dye—The lac after having been exposed to the sun to render it brittle is ground and strained as fine as possible: it is steeped twelve hours in water, after which the thread is thrown in with the leaves of a tree called by the Assamese *litakoo.* When it has absorbed most of this mixture, it is taken out, put over two cross sticks and shaken a short time to detach the threads well from each other: it is dried in the sun and the same process again gone through twice.

When it is wished to increase the brightness of the color, it is again dyed with munjeet: the latter is dried in the sun, and ground in the same way; it is steeped for 48 hours; the threads are put in and boiled in the same way, but with the leaves of a different tree, the *koh*; the thread is then dried in the sun and is ready for use. Nearly the same process is gone through for the blue dye.

UTTR OF ROSES.

Uttr of roses—essence—uttr, otto, or as it is sometimes called butter of roses—is the most celebrated of all the different preparations of this flower, and forms an object of commerce in Syria, in Persia, in India, and in various parts of the east. In England it is usually called the otto of roses, a corruption of the word "uttr," which in Arabic signifies perfume.

This essence has the consistence of butter, and only becomes liquid in the warmest weather: it is preserved in small flasks, and is so powerful that touching it with the point of a pin will bring away enough to scent a pocket handkerchief for two or three days. The essence is still procured almost in the same manner in which it was first discovered by the mother-in-law of the Great Mogul in the year 1612, by collecting the drops of oil, which float on the surface of vessels filled with rose-water when exposed to a strong heat, and congealing it by cold.

Honey of roses is made by beating up fresh rose leaves with a small quantity of boiling water; and after filtering the mass, boiling the pure liquor with honey. This was formerly much in use for ulcers in the mouth, and for sore throats.

Oil of roses is obtained by bruising fresh rose petals, mixing them with four times their weight of olive oil, and leaving them in a sand heat for two days. If the red Rose de Provence be used, the oil is said to imbibe no odour; but if the petals of pale roses be employed, it becomes perfumed.

The process of making *uttr* or essential oil of roses, is thus described in the *Asiatic Researches* :—

" A quantity of fresh roses, for example 40 lbs., are put in a still with 60 lbs. of water, the roses being left as they are with their calyxes, but with the stems cut close. The mass is then well mixed together with the hands, and a gentle fire is made under the still. When the water begins to grow hot, and fumes to rise, the cap of the still is put on and the pipe fixed. The chinks are then well luted with paste, and cold water put on the refrigerator at top: the receiver is also adapted at the end of the pipe; and the fire is continued under the still, neither too violent nor too weak. When the impregnated water begins to come over, and the still is very hot, the fire is lessened by gentle degrees, and the distillation continued till 30 lbs. of water are come over, which is generally done in about 4 or 5 hours. This rose-water is to be poured again on a fresh quantity (40 lbs.) of roses, and from 15 to 20 lbs. of water are to be drawn by distillation, following the same process as before. The rose-water thus made and cohobated, will be found, if the roses were good and fresh, and the distillation carefully performed, highly scented with the roses. It is then poured into pans either of earthenware or of tinned metal, and left exposed to the fresh air for the night. The *uttr* or *essence* will be found in the morning congealed, and swimming on the top of the water; this is to be carefully separated and collected either with a thin shell or a skimmer, and poured into a vial. When a certain quantity has been obtained, the water and feces must be separated from the clear essence, which, with respect to the first, will not be difficult to do, as the essence congeals with a slight cold, and the water may then be made to run off. If after that the essence is kept fluid by heat the feces will subside, and may be separated, but, if the operation has been neatly performed there will be little or none. The feces are as highly perfumed as the essence, and must be kept, after as much of the essence has been skimmed from the rose-water as could be. The remaining water should be used for fresh distillations, instead of common water, at least as far as it will go."

Messrs. Gilchrist and Charters advertised, in 1796, the *real Uttr of Roses*, manufactured by them at Ghazipore, at "one hundred rupees per tola vial, and fifty rupees per half tola vial." Also some of an inferior quality at twenty rupees per tola.

A very curious "caution to the public" was published in the papers by the above gentlemen, regarding the color of the genuine article :—"The pure *uttr* should be of a light yellowish color. Native distillers invariably mix with it a little verdigris in order to give it a green color, a custom said to have come from Cashmere." This custom was put in practice at the Ghazipore works, and it was some time before the adulteration could be discovered. During the season of 1793 it was luckily found out, that "the native distillers managed always to throw with great secrecy some powdered verdigris into the receiver while the rosewater continues hot enough to dissolve it, thus communicating the fine requisite green to the essential oil, without regarding the deleterious effects of so powerful a substance, although they well know that the rosewater and *uttr* may be occasionally used both in food and medicine." The genuine *uttr* can now be obtained at one-twentieth of the price paid in those days.

INDIGO.

From Abulfazl's *Ain-i-Akbari*, we learn that excellent indigo was produced near Ahmedabad, in Guzerat, and that it was regularly exported thence to Rum or Constantinople, and other remote marts. From the same source we gather that the *highest* price realized per maund of superior indigo produced at Biana, near Agra, was only Rs. 16!

Indigo has been manufactured in India, China and America from the earliest times. It was first imported from India, and made known to Europe by the Dutch about the year 1660. Several efforts were made by individuals to open up or rather resuscitate the manufacture in Bengal, but they were unable to compete with the French West India colonies. It was only on the destruction of St. Domingo, that a fair field was once more open to the East Indies.

In the "Report of the Proceedings of the East India Company, in regard to the culture and manufacture of indigo," it is stated that it was a well-known article of importation during the first century of their trade with this country; and in 1779-80 the Directors used their best endeavours to increase the quantity and improve the quality of indigo, entering into a contract for that purpose with Mr. James Prinsep.

A work on indigo planting published in 1835, and now out of print, written by Mr. John Phipps, states, and we believe quite correctly, that the first European indigo planter in India was Monsieur Louis Bonnaud.

Mr. Bonnaud was a native of Marseilles, and left that place at an early age to settle in the West Indies, where he acquired a considerable fortune and was initiated into the processes of indigo manufacture. After some years, he left the West Indies and settled, as a merchant, in the Island of Bourbon. In Bourbon, however, fortune proved unkind to him, and eventually he came, with the remnant of his fortune, to Calcutta, where he arrived in 1777, and took up his abode at Chandernagore. While there, he determined to turn his West Indian experience to account, and try the experiment of indigo manufacture. He accordingly hired a large "garden" at a place called Taldanga, in the district of Hooghly, but being unable to get sufficient land, he removed to Gondalpara, on the banks of the river, near Telniparah, south of the French settlement. There he hired another large "garden" and built two pairs of vats, which were in existence in 1818, and a drying house. There he formed the acquaintance of three Englishmen of substance, the name of one of whom was Adams, and, joining them, went to Maldah and established a factory. Afterwards Mr. Bonnaud became proprietor of the Nayahatta Factory, in Jessore, and finally of the large concern of Kulna and Mirzapore, near Nuddea. He left the latter concern in 1819 , about two years before his death, after manufacturing a splendid crop of 1400 maunds, the largest ever made by the concern, and probably the largest that had, up to that time, been made by a single concern in Bengal.

An advertisement appears in 1795 for the sale of some indigo factories belonging to Messrs. Harrie and Prince. These estates seem to have been in the neighbourhood of Calcutta.

Before long other parties entered the field, and for a long time indigo planters were almost the only settlers in the mofussil. Within ten years, indigo became an important export, and attracted the attention of the East India Company as a means of remittance. The dye has ever since been a valuable export of British India, and one of the chief articles of European commerce.

The Court of Directors in their letter, dated the 8th of April 1789, refer to the subject of the manufacture of indigo in these terms :—" We are in hopes the measure of laying open this trade will be attended with the good effects ex-

pected to result therefrom, and that hereafter it may become a permanent and advantageous article of commercial remittance, as well to the benefit of Bengal as of this country. In order to effect every possible improvement in the article, we transmit you herewith copy of a letter from William Fawkener, Esq., Secretary to the Lords Committee of the Privy Council for Trade, giving cover to a report of some experiments that have been made therewith by a manufacturer of this country, with some hints necessary to be attended to in the management and preparation of the same. As it is probable the information therein contained may be useful to the gentlemen concerned in indigo plantations, we direct that the same be made known in a manner that shall be most likely for rendering them publicly useful." To this letter was appended the experiments made with three kinds of East India indigo; one of which was manufactured by Lieutenant Rogers, the names of the planters of the other specimens are not given.

The East India Company commenced their investments in 1779-80, but for some years they were not profitable, and ordered to be discontinued. In 1790 the amount of indigo exported was 531,619 lbs. In 1795, Bengal became the chief source of supply. In that year Bengal contributed to the English market 2,955,862 lbs. About the year 1800, exports from the American states almost ceased, and in 1802-3 indigo began to be imported by those states from Bengal. From that time British India has had no rival in the traffic except Java. In 1796, Bengal produced 62,500 maunds of indigo, but did not reach that quantity again till 1805, when 64,803 maunds were manufactured.

Mr. Camac, having been "ordered to relinquish his concern in the manufacture of Indigo," his factory and residence at Arachy, about twelve miles south of Calcutta, also a house and indigo works at Russapuglah, were advertised to be sold on the 6th May 1790.

The cultivation of indigo in Bengal after this increased so rapidly that the English markets were, as early as 1815, being glutted with the dye. The total produce of indigo throughout the Bengal provinces in the year 1813 amounted to only 74,505 maunds and the average produce for some years before had been short of that quantity. In 1814 however, though by no means a favorable season, so much was the cultivation of indigo increased that the quantity produced reached 102,524 maunds. The exports to England had gradually reached 86,952 maunds in 1814, while it was found that 60,000 to 64,000 maunds was adequate to every purpose of home consumption and foreign supply.

The Calcutta houses of agency therefore began to be alarmed that the value of the dye in the English market would be so depreciated that heavy loss would accrue to the manufacturers. They therefore in September 1815 formed what was called the "Bengal Indigo Fund," which continued in existence till the failure of the great agency houses which had called it into being. The object of the Fund was to "purchase such indigo factories as the proprietors or their agents may desire to relinquish, and to the temporary relief of any individuals who may possibly be deprived for a time of all means of livelihood by the operation of the proposed arrangements." It was hoped by the closing of several factories that the amount of produce would be kept within a certain mark, sufficient to meet all demands for home and foreign consumption, and thus the prices would be kept up.

The process of manufacture of indigo in one factory in Bengal, that of Ghazipore, will serve for all :—

"The plant after being cut and carried to the factory, is examined, and if heated by exposure to the sun, or by lying in the boats, or on the hackeries, the bundles are immediately opened and exposed to a current of air in the shade. When the plant is ready, the packing of the steeper proceeds. The plants are placed with the stalks downward at the bottom of the vat, and over this lower range another with the leaves downward, so that the leaves of both ranges meet together; over this another layer of plant slantways, in the manner of thatching, the leaves always lowermost. A wooden grating is now placed on the top of the plant, the mass is then pressed down, with beams adapted to the dimensions of the vat, laid across, and retained in their position by stanchions. When the plant has been cut in wet weather, or when it has been subject to inundation, it is only slightly pressed down, and on the other hand when the plant is good and cut in dry weather, it is pressed hard.

"The steepers are then filled with water from the well or reservoir, so as to completely cover the plant, and six inches above it. This should be done quickly, for if much time is suffered to elapse, the plant gets heated in the vat, and produces what is called burnt indigo. During the fermentation which follows, bubbles of gas arise. The impregnated liquid is taken from the steeper so soon as it is considered the plant is sufficiently fermented, judging either from the smell, from the greenish tint of the liquor on the surface, or from the formation of a bright and steady scum on the bubbles, which break, and gradually become smaller and of a bluish tint, when the contents of the vat are nearly

ready; as long, however, as the bubbles continue to rise with any force the fermentation is incomplete.

"In blowing weather, when the bubbles are prevented forming on the surface, the state of fermentation may be ascertained by drawing a little of the liquid from the bottom of the vat, and should it be found of a green and yellowish color, emitting a pleasant smell, it may be safely let off. If the vat is drawn off before the fermentation is sufficiently completed the produce will be scanty.

"When the fermented liquor is let off through the plughole into the beater, a frothy extrication of gas covers the whole surface. It is a favorable sign if this froth, in subsiding, assumes a rosy tint, which is nothing more than a very thin film of feculæ, and proves that the deposition is ready to take place. In this second vat or beater the liquid from the steeper undergoes a beating of from two to three hours, being continually stirred about and agitated by 10or 12 men, each with a kind of short paddle. Another mode is that of agitating the water with the arms and feet alternately; and by this process a vat can be sufficiently beaten in the same time as with paddles.

"The beating is slow, till the vat presents a bluish tint, when it is increased a little, but not violently so, lest the grains of indigo now beginning to form, be injured thereby. This is a very important part of the process, for if the beating be discontinued too soon, a part of the produce will be left with the liquid unbeaten; and, on the other hand, if the beating be prolonged beyond the proper time, the grain will be broken thereby, and continue in the body of the water and not descend without the use of a strong precipitant, such as lime or ash leys, both of which articles however do injury to the quality of the dye. In some instances even the above remedies will not cause the whole of the feculæ to descend, and in that case a considerable quantity is lost on drawing the water out of the vat; to remedy which evil, an additional number of beaters must be sent into the vat, to repeat beating; and with timely precaution, the whole vat may be saved.

"Between two or three hours after agitation has entirely subsided, the useless water is let off; this is done gradually and great precaution taken to have the surface of the beater skimmed. When all the water is drawn off, the sediment or feculæ is left to view, covering the bottom surface of the vat; this is carefully swept, and washed down with clean water to the plug and null of the vat, whence it is conveyed by a trough to the feculæ receiver. In some instances the feculæ

is allowed to remain all night in the receiver to settle, to enable any water that may remain to be drawn off.

"The feculæ are now either baled, or pumped into the boiler; on occasions of transfer that the liquid and feculæ undergo from the beater till it reaches the press boxes, it is carefully strained each time, to exclude all impurities: baize is considered preferable to cotton cloth for this purpose. Immediately the feculæ is in the boiler the fire is lighted, and kept up briskly, as long as the liquid froths on the surface of the boiler. After the froth has subsided entirely, the boiling with a quick fire continues for a quarter of an hour longer. This process ceases as soon as the indigo emits from the boiler an agreeable smell such as is exhaled from a brew-house, or when the steam is clear and white, and the surface of the boiling liquid is perfectly bright, all the froth having subsided.

"At about five or six inches from the bottom of the draining table, thin wooden battens are laid, on the top of which is a network of thin bamboo, covered with cloth, which should be strong and perfect, so that none of the feculæ may escape. The feculæ, while boiling hot, is let off by a cock into a trough which conveys it to a table, where it is again strained, and then covered up with cloth stretched upon a frame; the feculæ is allowed from 12 to 18 hours to drain: a basin formed outside receives through an aperture at one corner of the table the water that has dropped from the feculæ, which water is again returned by earthen vessels or a pump through a strainer to the table, until it runs off clear and free of any coloring matter. The indigo having cooled and settled, is ready to be put into the press boxes or frames, which have strong cloths fitted inside so nicely that they may not burst in the process of screwing.

"The screwing being completed, the false sides and ends of the box are removed, leaving the mass of dye at the bottom of the frame, where it is marked into squares with a 3 inch rule for cutting and stamping with the mark in use. It is then turned upon its edge against the cutting frame and cut by a brass wire into cakes of three inches square, a blunt smooth edged knife may also be used. The cakes are then conveyed commonly in wooden trays covered with cloth, to the drying house and there placed about half an inch apart on racks, prepared for the purpose, on which the cakes remain three or four days without being touched, after which they are carefully turned at intervals until they are properly dried. The cakes of each day's manufacture are kept separate, to facilitate the assortment in packing, as the quality of every batch differs in some degree, more or less, according to the state of the plant when cut."

SALT.

The season of manufacture dates from December to the setting in of the rains. In carrying on the manufacture there is a good deal to contend with. Heavy rains and unseasonably high or low tides greatly impede it. The produce is also affected by fogs and cloudy or hazy weather. But supposing that every thing is in the Molunghee's favor, and the time for manufacture has arrived, we will proceed to look at the various processes which the sea water undergoes before it becomes the article found on our table as edible salt.

Here is a *khullaree*, or spot of ground, about three begahs in extent, divided into three equal portions, which are bunded. These divisions are called *chatturs* or salt fields, into which the salt water is introduced.

In each chattur, at a convenient spot, is dug a reservoir or *jooree* to contain the quantity of salt-water necessary to carry on the manufacture; the Molunghee has to be careful in keeping his *jooree* well supplied from the adjacent river or canal on each returning spring tide, and to effect this he excavates a small drain communicating with the river or canal, through which the salt water is conveyed at high water spring tides into the reservoir.

On each *chattur* is constructed the *maidah*, a primitive filterer composed of a circular mud wall $4\frac{1}{2}$ cubits high, $7\frac{1}{2}$ cubits broad at top, $12\frac{1}{2}$ cubits at its base; at its summit is a basin of about one and a half cubits depth, and 5 cubits diameter; the bottom is prepared of clay, ashes and sand; it is extremely clean and hard, and quite impervious to water; a hole

is pierced in the centre of this basin, and an earthen pot or *koonree* is carefully fitted thereto so as to admit of the insertion of a hollow reed or bamboo to connect the basin with the *nàd*, or receiving vessel, and which is intended to act as a pipe to draw off the brine from the former to the latter. This *nàd* is capable of containing from 30 to 32 ghurrahs of salt water, and is attached to the maidah. Over this *koonree* is laid a light bamboo frame, upon which is placed a layer of straw, and on that again a stratum of the chattur saline earth is thrown, and stamped down hard with the feet.

Into the hollow or basin of this *maidah* the saline earth, which has been scraped off the salt fields, is thrown until it is filled to the brim. Afterwards 3 or 4 men stamp it well down with their feet, and throw upon it about 80 ghurrahs of salt water from the *jooree* or reservoir already described. This quantity of water is however poured on the *maidah* at intervals, so as to insure its not overflowing, but percolating gently and emptying itself, charged with the saline properties of the earth already there, through the reed pipe into the *nàd* or reservoir *W.* near the base of the maidah. The above quantity of water is calculated to fill the *nàd* with about 32 ghurrahs of strong brine ready for boiling.

EXTERIOR OF THE BOILING HOUSE.

After the saline earth has been thus partially deprived of its saline properties, it is taken out and used as a manure, being scattered over the salt field to increase its fecundity for the next season.

The brine is now carried in ghurrahs into the *thannah nád*, or receiver, previously prepared, which is capable of holding 30 to 40 ghurrahs and is close to or outside the boiling house, where he allows it to settle for about 24 hours to precipitate all impurities previous to boiling. When sufficiently clear, it is baled out and carried into the boiling house.

The *Bhoonree ghur* or boiling house is generally situated close to the salt fields and is built north and south. Within the boiling house or in its northern compartment is erected a mud or earthen furnace raised from the ground about 2½ or 3 cubits; over its centre is the jhánt, or boiler, the diameter of which is about 5 cubits; it is made quite circular and is usually called a *jhánt chukkur*.

INTERIOR OF THE BOILING HOUSE.

On this *chukkur* are arranged very carefully in circles, rising one above the other in the shape of a pyramid, from 200 to 225 little conical shaped earthen pots, called *koonrees*, each capable of containing about 1½ seers of brine; these are cemented together merely with the same mud or clay

with which the *jhánt chukkur* is made, and this clay hardens around them by the heat of the furnace until the whole forms itself into a solid pyramid of little boilers capable of boiling, in from 4 to 6 hours, in the aggregate, two baskets full of salt, or from 2 to 3 maunds in weight. The contents of these baskets are called a *jál,* and the fireplace or *choolah* is immediately under the *jhánt.*

These little earthen pots or *koonrees* are filled with brine brought from the outside *thannah nád;* the boiling now commences. When the brine in the *koonrees* is partly evaporated, the molúnghee adds more with a primitive ladle made of a cocoanut fixed to a piece of bamboo, which he dips into the ghurrah of brine placed near the *jhánt,* and this he continues doing till the *koonree* is about three parts full of salt. At the back of the boiler is a hole, into this all the ashes from the straw and grass burnt is collected from the bottom of the choolah.

After 4 or 5 hours boiling, all the aqueous contents of the *koonrees* having been evaporated in steam, the salt is taken out with iron ladles and deposited in baskets which are placed on either side of the choolah on bamboo frames, and there it is allowed to drain for about 24 hours, while the molunghee repeats the above process for another boiling.

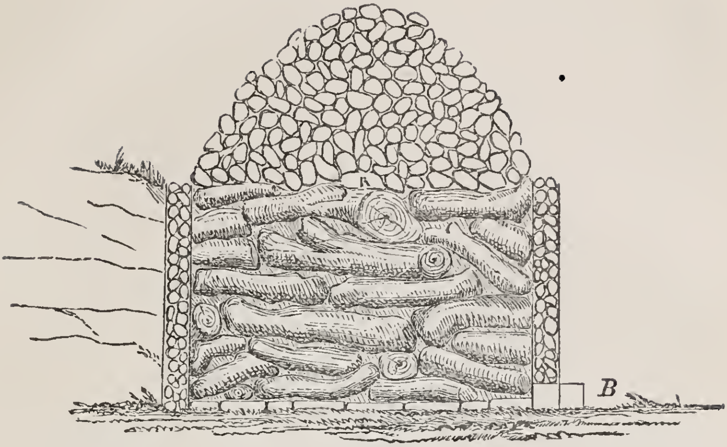
An improved method of preparing *sea salt* in India was introduced into Calcutta in 1842, and a company formed to carry on work in the Lakes to the east of the town and in the Sunderbuns—at Narainpore and at Ghorda,—where, after the first difficulties inseparable from a new undertaking were overcome, salt of a very superior quality was manufactured in large quantities.

LIME.

The stones from which lime is made are boulders obtained from the beds of the mountain torrents in the Dhoon,—the Ganges, the Soong ; and in fact all the rivers flowing from the Himalayas into the Dhoon furnish boulders. In the neighbourhood of Hurdwar they are scarce, and the quantity gradually decreases as we proceed down to the southward, and from 6 to 8 miles below Hurdwar they disappear altogether.

The mode of making lime in the Dhoon is as follows :—

The lime burner constructs a kiln according to the sketch given in the next page.



The kiln is circular, about 7 feet high, and 13 feet in diameter; the wall is built of common rubble stone and mud, floored with flags. The whole of the interior of the kiln, to the height of the wall, is packed closely with fire wood. The lower part of the kiln is composed of billets of *dry* wood, placed in the manner shown in the sketch. Over these are heaped the boulders, unbroken, just as they are brought from the river.

The kiln being now completed is fired at the small orifice marked *A.*; *B.* is a draught hole. As the consumption of the fuel goes on the boulders gradually sink, and so long as there is a fierce heat in the kiln the lime-maker piles on more boulders, which operation he continues till the fire begins to subside, when he ceases. With materials at hand a kiln of the size given, with a sufficient number of laborers can be filled, fired and emptied in about three weeks, and its produce, if the boulders are well burnt, will be 500 maunds of lime.

On the completion of the burning, and when the stones are cooled down, a small piece of ground, close to the kiln, is cleared and boys are employed to take the boulders from the kiln and strew them upon the ground selected. The stones which are not thoroughly burnt are put on one side to be replaced upon the kiln; and water is thrown upon the well burnt stones, which are then allowed to remain in order to absorb the moisture thoroughly, for about ten hours, generally throughout the night. In the morning the whole heap is turned over with the fourah (mattock), and if necessary

water again thrown over—this operation is called "slaking." The effect of it is the opening out of the boulders and the appearance of the lime. When this operation is gone through, the partially burnt stones are again picked out; the lime is then slightly "screened," that is, shaken up with the hand, and any small pieces of stone still to be found in it separated. The lime is now fit for the market.

SUGAR.

The supply of coarse brown sugar or molasses in Bengal is mainly derived, not from the cane, but from the date tree, and the date plantations have, during the last eighty years, enormously increased over several well-known districts—Jessore, Burdwan, Baraset and Nuddea.

The trees are planted in rows or clumps, and are not grown for fruit, as in Arabia or Beluchistan. The tree becomes profitable after seven years' growth, and may continue to yield a return for thirty or forty years. In the month of October the villagers are seen ascending their date trees, and making incisions on the lowest branch of the feathery tuft at the top. This is done every alternate year. An earthen pot is placed under each incision, and when the cold nights begin, the liquid flows slowly into the pot beneath, whence it is removed in the morning. The colder and stiller the weather the greater the flow of juice. Rainy weather, such as now and then interrupts the enjoyable climate of the cold season, stops the flow of juice for a time, but the process goes on, with few intervals, between November and March. The juice is boiled down and clarified by means of a coarse weed that grows in almost every tank. The cultivation is highly remunerative. The spaces between the trees in a date plantation are turned to account otherwise, for early rice and for the second crop of mustard.

The process of making crystallised sugar from toddy, or the juice of the cocoanut palm, in the island of Ceylon, is as follows. The toddy is collected in vessels perfectly clean, into each of which a small quantity of the *al*, or banyan tree, is put, to retard fermentation, and correct astringencies. Before the liquor begins to ferment, it is strained through a clean cloth, and boiled in a pan of brass, or other metal, until the impurities rise to the surface, when they are carefully skimmed off. When the liquor has lost its watery color, and become a little reddish, it is poured into another pan, and boiled over a strong fire, the scum being again taken off as it accumulates. The fire is then gradually diminished, until a white scum appears on the surface, and

increases to a froth. The liquor then becomes adhesive, and of a consistency to be removed from the fire, which is ascertained by allowing a little of it to cool, and by drawing it into a thread between the finger and thumb. If the thread does not break when drawn to about an inch in length, the syrup is removed from the fire, poured into another vessel, and left to cool till it is little more than lukewarm. A little crystallised *jagri*, or coarse sugarcandy, is then mixed with it, and the whole is poured into a fresh vessel, having an aperture and stopper in the bottom, so accommodated as to allow the uncrystallised part to ooze out. Crystallisation is completed in about a week, when the stopper is removed to allow the remaining fluid to escape, and, at the end of another week, the crystallised sugar is taken and placed near a fire in a sack.

The famous Rosa Factory for the manufacture of rum and sugar, was established by Messrs. Carew and Co. at Shahjehanpore several years before the great Mutiny of 1857 broke out. At that time the factory was in full operation. It was partially destroyed by the mutineers in those troublous times. On the return of peace the buildings were restored and enlarged.

The Rosa Factory supplies nearly if not quite all the rum consumed by the Army in India—at any rate in this part of India—amounting to over 52,250 gallons of London proof. The Shahjehanpore sugar finds its way into almost every European homestead in the upper provinces, and with Dhoba sugar has almost entirely driven English sugars out of the market.

GHEE.

In making ghee, the first object is to get the butter thoroughly separated from the milk in as pure a condition as possible. This is secured by placing the can or vessel containing the freshly-drawn milk in an earthenware vessel of boiling water for about five minutes. The milk, after thus being exposed to a temperature of about 212 degrees is poured into another vessel, and, butter-milk is added, from two to three drops in hot weather, to a teaspoonful in cold weather, per quart of milk. The vessel with the milk is put aside for 24 hours, the milk is then churned. The yield of butter averages from about 1½ to 2 ounces per quart of milk, but of course varies greatly. The butter is next melted in an open vessel over a slow fire. Boiling is continued for from fifteen to twenty minutes, when most of the water is evaporated, and the ghee, clear and bright, rests on the heavier

sediment covering the bottom of the vessel. The ghee, when cold, is carefully poured off leaving the sediment behind, and is fit for immediate use, or for storing for future use. The outturn of ghee varies with the quality of the butter and the purity of the ghee made ; an average outturn is 50 to 60 per cent. of the weight of the butter used, when the butter is made from the milk of the cow. The yield of ghee from buffalo butter is higher. Ghee is never made when a fair price can be obtained for milk or butter. A viss (3 lb. 2 oz.) of ghee sells for usually only about Rs. 1-2-0, and to make this, not less than 6 lbs. of butter, or 48 quarts of milk of the cow, would be needed. In nearly all the large towns of Southern India cow's milk will sell readily at As. 2 per quart, and butter at As. 12 per pound. Thus the milk that would be required to make a viss of ghee worth Rs. 1-2-0 would as fresh milk sell for about Rs. 6, and if churned would yield butter worth Rs. 4-8-0.

SALTPETRE.

In various parts of India saltpetre appears as an efflorescence on the surface of the ground, in conjunction with lime and soda. From this state it is worked up by the natives into the marketable material called nitrate of potass. The process of manufacture in the district of Tirhoot is as follows:

In the month of November, the loneahs or native manufacturers of saltpetre commence their operations, by scraping the surface off from old mud heaps, mud buildings, waste grounds, &c., where the saltpetre has developed itself in a thin white efflorescence, resembling frost rind. This saline earth being collected at the factories, the operator first subjects it to the processes of solution and filtration. This is effected by a large mud filter, lined on the inside with stiff clay. It is a round hollow basin, from 6 to 8 inches in diameter. A false bottom is formed of pieces of bamboo, laid close. Over these bamboos, a covering of strong close wrought grass mats are laid, which complete this simple form of filter.

The operator then proceeds with the process, by spreading over the mats a thin layer of vegetable ashes, generally from the indigo plant, upon which the earth to be subjected to the filtering process is laid, and trodden down.

After this point has been adjusted, water is poured gently upon the earth to the depth of four or five inches, according to the size of the filter and quantity of earth used (one of six feet diameter will filter 20 maunds of earth.) The whole is then suffered to remain tranquil for several

hours, during which time the water gradually passes through the earth, dissolving the saline matter in its passage, and filtering through the mats, drops into the empty space between the solid and false bottoms, and is conveyed by means of a spout of bamboo, or a hollow tube, into an earthen receiver. The saltpetre liquor thus obtained is more or less colored with oxide of iron and decomposed vegetable matter. Its specific gravity also varies with the quality of the earth operated upon. The average is 1·120.

The second process is to evaporate the saltpetre liquor to a crystallising state, which is effected in earthen pots fixed in two rows, over an oblong cavity dug in the ground, the interstices between the pots being filled up with clay. An aperture at one end of the cavity serves for an egress to the smoke; another at the opposite end is used for the introduction of fuel which is generally dry fallen leaves gathered from the mango groves.

Such are the simple materials used in this part of the manufacture. The boiling is continued till the liquor is evaporated to the crystallising point, which is ascertained by the operator taking from time to time a small portion of the liquor from the pots, and setting it aside to cool in small earthen dishes, like a common saucer. After the liquor has cooled and the crystals formed, agreeably to the practice of the operator, the fire is stayed, and the liquor removed to large shallow earthen dishes (which are used instead of crystallising coolers,) placed in rows, and sunk to the brim in soft earth. At the end of about thirty hours, the process of crystallisation is finished. The crystals of saltpetre are taken out of the coolers, and put into baskets to drain, after which they are removed to the store house, ready for sale.

TEA.

The Chinese tell the following fable as to the origin of the cultivation of the tea plant:—"In the 519th year of the Christian era, Drama, the son of an Indian king, came to China to preach his religion. He justified his doctrines by an austere and moral life, living upon herbs and passing days and nights in the contemplation of the Supreme Being, in conformity to a vow he had made never to sleep. After several years of watchfulness he was one night surprised by the power of sleep: waking in the morning, full of repentance and regret for the violation of his vow, he cut off his eye-lids as the guilty instruments of his crime, and threw them on the ground. The next day he found them metamorphosed into two of those bushes which have been called Tea."

Bishop Heber is credited with the first hint that tea might flourish in Kumaon; but many of the speculations which arose in the earlier years of the British administration of the Himalayas, are believed to have been founded on the mistaken belief that a plant found wild in the forests was an uneducated connection of the Chinese Bohea. It was really nothing but a wretched weed called *osiris*, which had usurped, without any botanical claim, the appearance of the genuine article.

The tea plant was discovered in Assam by Mr. Bruce in the year 1825, or a twelvemonth after the province passed into the hands of the British. The Government themselves became the first cultivators; but feeling that the speculation would be more manageable in the hands of private companies, whose enterprize it was deemed politic to encourage, they early withdrew from the experiment, and transferred their gardens to the Assam Tea Company.

It was in the early part of the year 1827 that Dr. Royle first mentioned to Earl Amherst, then Governor General of India, the probability of a successful cultivation of tea in the Himalayan mountains, and included it specifically in a report which was presented to the Indian Government at the latter part of that year. On Lord William Bentinck visiting the Seharunpore Botanic Garden, in 1831, that gentleman again mentioned the subject, and included it in the report which was presented to his Lordship, in which he stated his wish "to attempt the cultivation of the tea plant, of which the geographical distribution is extended, and the natural sites sufficiently varied, to warrant its being easily cultivated." Dr. Wallich also, in the year 1832, presented a paper to the Committee of the House of Commons, recommending the cultivation of tea in the districts of Kumaon, Gurhwal, and Sirmoor. A Tea Committee was accordingly appointed, who reported that "the experiment may be made with great probability of success in the lower hills and valleys of the Himalayan range."

For experiment, two sites were chosen, near Almorah (Kumaon) between 4,500 and 5,000 feet above the sea; and there, for six years, between 1834 and 1840, tea bushes continued to grow on some six or seven acres of land, without attracting much notice from the outside world. In 1841, Dr. Falconer visited Kumaon, and pronounced that the experiment, in so far as the possibility of rearing the tea plant in the provinces of Kumaon and Gurhwal might be safely pronounced a success.

The discovery of the plant in Assam appears to have suggested the likelihood of its also being indigenous to Cachar. In the year 1834, the Superintendent of Cachar announced the existence of "a species of camelia, the leaves of which he had seen manufactured by a native from the confines of China into something resembling tea." But whilst the productive resources of Assam were gaining rapid development, the forest wealth of Cachar lay wholly neglected till the year 1855, when a Cacharee cooly, having seen the Assam plant, proved its identity with the luxuriant and indigenous growth of his own native hills. Since then private capital has flowed liberally into the district, and numerous gardens have sprung up, which have been worked as profitably as those of Assam.

A deputation, consisting of Messrs. Gordon and Gutzlaff, was then sent to the coasts of China to obtain tea seeds, which they succeeded in obtaining from the southern parts of the tea districts of China. These arrived in Calcutta in January 1835, and being sown, vegetated and produced numerous plants. But of 10,000 young plants sent to north west India only 1326 reached the hills alive in the beginning of the year 1836. The tea nurseries were formed at Kumaon and Gurhwal in the Himalayas, and immediately began to grow with all that vigour that had been anticipated.

The next step was to obtain some Chinamen, who understood the art of preparing tea, not an easy task. The first engaged refused to proceed to Kumaon; Dr. Wallich, however, succeeded in engaging nine others, who reached their destination in April 1842. In January 1843, the first sample of Himalayan tea was received in England, and reported on by members of the Chamber of Commerce, who pronounced the tea to be a very good marketable article, and worth in London about 2*s.* 6*d.* per lb. The specimen sent to London was said to be "of the Oolong Souchong fine kind, flavored and strong, equal to the superior black tea generally sent as presents, and better for the most part than the China tea imported for mercantile purposes."

The culture and manufacture have since been carried on with energy. In the year 1848 the cultivation covered a thousand acres, and was extended to the Beas valley, and Kangra in the Punjab.

In 1848, the Court of Directors engaged Mr. Fortune, so well known as an horticulturist, and from his work on China, to proceed to the northern coasts of that country, in order to obtain the best kinds of tea plant, perhaps still more hardy

varieties; to make enquiries respecting the different kinds of manufacture, and if possible to engage some manufacturers acquainted with the processes employed on the teas of commerce to return with him to India. Mr. Fortune returned to India in 1851, bringing with him above 12,000 living plants, (in addition to the 8,000, previously sent by him from China,) and a vast number of seeds in a germinating state; with these he hastened to the nurseries in the Himalayas. He had also succeeded in bringing with him eight more manufacturers of tea from the above districts. With these he at once entered upon his duties.

When the Governor General visited the Kangra Valley in 1850-1 there were already two small nurseries formed from plants sent from Kumaon, the one at Nagrota and the other at Howarnah in the Pahlun valley. The luxuriant growth of the plant in these sites induced his Lordship to sanction the formation of an extensive plantation at Holta, where the tea plant was found to succeed well.

As a rule, plucking commences towards the end of March, and the first flush is exhausted and the "spring crop" gathered in by the middle of April. Plucking begins again in June-July, according to the setting in of the regular rains, and continues, with an occasional break, varying in date and duration according to the rainfall, until the end of October or beginning of November. The average number of plucking days throughout the year is about 120.

Pruning is carried on at various times, the "tipping" of the upper shoots being generally done as soon as the sap has fairly descended about December and January. Advantage is taken of the break after the spring crop is got in, to clean out the bushes by cutting out dry and heavy wood from them so as to give room and air to the greener and more prolific branches.

The process of manufacture is much the same in all tea gardens.

In the first place the youngest and most tender leaves are gathered; but when there are many hands and a great quantity of leaves to be collected, the people employed nip off with the fore finger and thumb the fine end of the branch with about four leaves on, and sometimes even more, if they look tender. These are all brought to the place where they are to be converted into tea; they are then put into a large, circular, open-worked bamboo basket. The leaves are thinly scattered in these baskets, and then placed in a framework

of bamboo. The baskets with leaves are put in this frame to dry in the sun. The leaves are permitted to dry about two hours, being occasionally turned ; but the time required for this process depends on the heat of the sun. When they begin to have a slightly withered appearance, they are taken down and brought into the house, to cool for half an hour. They are then put into smaller baskets of the same kind as the former, and placed on a stand. People are now employed to soften the leaves still more by gently clapping them between their hauds, and tossing them up and letting them fall, for about five or ten minutes. This is done three successive times, until the leaves become to the touch like soft leather ; the beating and putting away being said to give the tea the black color and bitter flavor. After this the tea is put into hot cast-iron pans which are fixed in a circular mud fireplace. About two pounds of the leaves are then put into each hot pan, and spread in such a manner that all the leaves may get the same degree of heat. They are every now and then briskly turned with the naked hand to prevent the leaf being burnt. When the leaves become inconveniently hot to the hand, they are quickly taken out and delivered to another man with a close worked bamboo basket. The leaves are next collected into a ball. The ball of tea leaves is from time to time gently and delicately opened with the fingers, lifted as high as the face, and then allowed to fall again. This is done two or three times, to separate the leaves. The leaves are now taken back to the hot pans and spread out in them as before, being again turned with the naked hand, and when hot taken out and rolled ; after which they are put into the drying basket and spread on a sieve, which is in the centre of the basket, and the whole placed over a charcoal fire.

After the leaves have been half dried in the drying-basket, and while they are still soft, they are taken off the fire and put into large open-worked baskets and then put on the shelf in order that the tea may improve in color.

Next day the leaves are all sorted into large, middling, and small; sometimes there are four sorts. The smallest leaves they called Pha-ho, the 2d Pow-chong, the 3d Su-chong, and the 4th or the largest leaves, Toy-chong. After this assortment they are again put on the sieve in the drying basket (taking great care not to mix the sorts) and on the fire as on the preceding day; but now very little more than will cover the bottom of the sieve is put in at one time. As the tea becomes crisp it is taken out and thrown into a large receiving basket, until all the quantity on hand has

become alike dried and crisp; it is then piled up eight or ten inches high on the sieve in the drying basket, in the centre a small passage is left for the hot air to ascend, the fire that was before bright and clear, has now ashes thrown on it to deaden its effect, and the shakings that have been collected are put on the top of all, and the basket with the greatest care is put over the fire. Another basket is placed over the whole to throw back any heat that may ascend. When the leaves have become so crisp that they break by the slightest pressure of the fingers, it is taken off, when the tea is ready. All the different kinds of leaves undergo the same operation. The tea is now put into boxes and first pressed down with the hands and then with the feet.

There is a small room inside of the tea house. When the weather is wet and the leaves cannot be dried in the snn, they are laid out on the top of this room on a net work, on an iron pan, the same as is used to heat the leaves; some fire is put into it, either of grass or bamboo, so that the flame may ascend high, the pan is put on a square wooden frame that has wooden rollers on its legs, and pushed round and round this little room by one man, while another feeds the fire, the leaves on the top being occasionally turned; when they are a little withered, the fire is taken away, and the leaves brought down and manufactured into tea, in the same manner as if it had been dried in the sun.

OPIUM.

The cultivation of the poppy in British India is confined to the large central Gangetic tract, about 600 miles in length and 200 in depth, which is bounded on the north by Goruckpore, on the south by Hazareebagh, on the east by Dinagepore and on ths west by Agra. This large extent of country is divided into two agencies, the Behar and the Benares, the former being presided over by an agent stationed at Patna, at which station is the central or sudder factory of the agency, the latter being under the control of an agent residing at Ghazeepore, which station contains the sudder factory of the Benares agency. Of the two agencies, the Behar is the larger and more important, sending to the market about treble the quantity of drug turned out by the Benares agency.

In the Benares agency the aggregate amount of land under cultivation in the season 1849-50 was 107,823 begahs. Of late years the cultivation of the poppy has been silently though rapidly extending in the North Western Provinces. It is also grown in the Rajpootana states, in Oude and over a great portion of the Punjab.

The lands selected for poppy cultivation are generally situated in the vicinity of villages, where the facilities for manuring and irrigation are greatest. In such situations and when the soil is rich, it is frequently the practice with the cultivators to take a crop of Indian corn, maize or vegetables off the ground during the rainy seasons, and after the removal of this in September, to dress and manure the ground for the subsequent poppy sowings. In other situations however, and where the soil is not rich, the poppy crop is the only one taken off the ground during the year.

The amount of produce from various lands differs considerably. Under very favorable circumstances of soil and season as much as 12 or even 13 seers of standard opium may be obtained from each begah of 27,223 square feet. Under less favorable conditions the outturn may not exceed 3 or 4 seers, but the usual amount of produce varies from 6 to 8 seers per begah. The poppy cultivated in the Benares and Behar agencies is exclusively the white variety, (Papaver somniferum album.) In situations favorable to its growth it vegetates luxuriantly, attaining usually a height of about four feet.

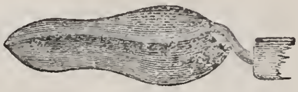
In February the plant is generally in full flower, and towards the middle of the month and just before the time for the fall of the petals; these latter are all stripped off and collected. They are then formed into circular cakes from 10 to 14 inches in diameter and about 1-12th of an inch in thickness. These cakes are known under the name of " leaves," and are used in forming the inner and outer portions of the shells of the opium cakes.

In a few days after the removal of the petals the capsules have reached their utmost state of development, when the process of collection commences, which extends from about the 20th of February to the 20th of March. The mode of collecting the juice is as follows:—At about 3 or 4 o'clock in the afternoon, individuals repair to the fields and scarify the poppy capsules with sharp iron instruments called " Nushturs." (*a*) Early the following morning

(*a*)

the juice is collected by means of instruments called " Sectooahs," (*b*) which are made of sheet iron and resemble concave

trowels, and with these the juice is scraped from the surface of the scarifications, until the instruments become filled, when their contents are emptied into an earthen pot which the collector carries by his side.

(b) 

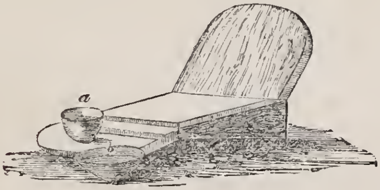
After the plant has ceased to yield any more juice its utility is still unexhausted. The capsules are then collected, and from the seeds an oil is extracted which is used by the natives for domestic purposes, both for burning in lamps, and for certain culinary purposes Of the entire seed a comfit is made, resembling in appearance caraway comfits. Of the dry cake remaining after the extraction of the oil, a coarse description of unleavened bread is sometimes prepared by the very indigent, or it is given to cattle or used medicinally for poultices. The capsules deprived of their seeds are still available for preparing emollient and anodyne decoctions, which the natives use both internally in coughs, and externally as fomentations. The stems and leaves are left standing, until they have become perfectly dry under the influence of the winds of April and May, when they are removed, and crushed and broken up into a coarse powder, known under the name of poppy trash, and which is employed in packing the opium cakes.

The opium now requires frequent attendance on the part of the cultivator. It is daily exposed to the air, though never to the sun, and regularly turned over every few days in order to ensure an uniform dryage in the whole mass, and this process is persevered in for the space of three weeks or a month, or in fact, until such time as the drug may have reached within a few degrees of standard consistence. Standard opium, according to the Benares regulations, is opium which on being subjected to a temperature of 200 Fahr. until everything volatile is driven off, shall leave a residue of 70 per cent. this is the consistence at which the agency puts up the drug for the market.

After having been duly weighed into store, the opium receives but little treatment in the factory. It is kept in wooden boxes capable of containing about 14 maunds (10 cwt.) each,

in which it is (if below the manufacturing standard) occasionally stirred up from the bottom, until it has acquired the necessary consistence. Whilst remaining in these boxes it speedily becomes covered with a thin blackish crust (ulmine) and deepens in color according to the amount of exposure of air and light which it undergoes. Should the drug be of very low consistence, it is placed in shallow wooden drawers, instead of in boxes, in which it is constantly turned over, until its consistence has approximated to 70 per cent. It is then manufactured or made up into "cakes" by being transferred from the boxes to large wooden vats 20 feet long, 3½ feet wide and 1¼ feet deep. In these vats it undergoes a further kneading and admixture, by men, who wade knee deep through the opium from one end of the vats to the other, until their contents appear to be of uniform consistence, and have reached the factory standard.

Down either side of the room in which the vats are placed, are ranged the cake makers, numbering usually about 110. The cakes are formed in brass cups, *a*, *b*, and when the manipulation is complete, the drug is not unlike in size and appearance a 24lb shot. It is then exposed to the air for three days. The average number of cakes made daily in the factory during the manufacturing season is from 6,500 to 7,000.



By the end of July the manufacturing is finished, but the cakes still require much attention, they are constantly turned over in their cups and as mildew collects on their surfaces, it is removed by rolling and rubbing them in dry poppy trash. By October the cakes have become perfectly dry to the touch, and have acquired considerable solidity, and they are now packed in chests, each of which is furnished with a double tier of wooden partitions, each tier presenting twenty square compartments, for the reception of so many cakes, and in which the cakes are studded by means of loose poppy trash, with which all the interstices are filled.

PAPER.

India abounds in fibre-producing plants of all descriptions; and there are, perhaps, few countries in the world richer in thèse than India. Some of the fibrous plants grow on the sea-shore, and some in its uplands; some thrive in damp marshy soils, and some spread out in dry barren tracts; some flourish in open fields under tillage, and some are reared in garden cultivation. Many of these natural products have from the early part of the present century been experimented upon with a view to test their fibre-producing properties, and have nearly all produced excellent fibres which can answer many industrial purposes, and materially aid in supplying stock to the paper mills in India. Whilst, therefore, our country can supply such an abundant stock of this material, it is much to be regretted that, though the advance of civilization has given birth to various important industries, little has been done as yet in effecting improvements in this direction.

The native paper works, though they are mutiplying in rapidly increasing numbers, produce for the most part coarse, rough, unbleached papers, though some of them, notably the bamboo paper of Kumaon, is very tough and durable. The Bally mills make finer paper, but as yet they have not succeeded in producing well bleached papers at a remunerative rate; and they cannot compete with Europe paper of any but coarse kinds.

Paper is made in India of various materials; in Nipal and some other places strips of what is called the paper plant are used, which are boiled with the juice of oak ashes, and when the slips of the plant are sufficiently soft and have absorbed the juice of the bark, they are pulverised in a stone mortar with a wooden mallet, till the whole is reduced to an uniform pulp, like so much dough. In other parts of India, sunnee or hemp is used for the same purpose. When the pulp is ready it is run into vats, and floated in clean water. The paper maker then takes a frame, with stout wooden sides, so that it will float well in the water, and with a bottom of fine bamboo strips arranged like a chick or screen, but so closely placed as to stay all the pulp; this is lowered into the trough, and when the pulp has well spread itself over the bottom of the trough, the frame is raised and the water allowed to strain off. The paper is now made; the frame is then carefully upset, face

downwards, on to a smooth board, and thus sheet after sheet is piled up. The sheets are dried either by means of fire or pasted on to the walls of the manufactory, and exposed to the heat of the sun, which soon dries them. When dry, the paper is subjected to a polishing process by the application of a small smooth piece of wood, which is rubbed rapidly over its surface, and the paper, such as it is, is ready for use. It is used for native writings. Large quantities of this stuff is made in jails by convicts.

TILLEE OR BLACK SEED OIL.

Tillee or black seed is cultivated to a large extent at Gwalior and forms a staple of considerable trade. From it oil is expressed by an exceedingly simple process, and at a little more than a nominal cost. The machinery used is a sort of mill, the chief and most expensive part of which consists of a trunk of a tree of hard wood, hollowed out at one end, and set perpendicularly on the ground. It will last for about 40 years, and during the first three years requires no repairs. One man and one bullock work six hours at a time. Two men and two bullocks work 12 hours out of 24, and they press 20 seers of seed, which will produce 8 seers or 40 per cent. of oil. The process of expressing oil is as follows:—Two seers of seed are put into the mill. The seed is sprinkled three or four times with hot or cold water (in all about 8 ounces), by which means the seed obtains a consistency, and forms into a sort of cake round about the sides of the mill. After the seed has been well bruised, about a seer of scalding oil is poured into it, which makes the seed pulpy, and causes a quicker extraction of its oil. When about a seer of oil has been collected in the earthen pot placed under a hole at the bottom of the mill as a receiver, it is placed on a fire, made scalding hot and again poured into the mill. This is repeated three or four times, the quantity of oil, collecting in the receiver, increasing each time in nearly a double proportion, until at last it is ascertained by breaking off a piece of the cake, which by that time gets very hard and is adhering to the sides of the mill, that no more oil remains in it. This process takes about three hours.

SANDAL WOOD WARES.

Who has not seen and admired the beautiful workmanship of the sandal wood and porcupine quill boxes brought round for sale in the streets of Calcutta? Many of these come from Madras and Bombay. Vizagapatam is justly celebrated for the very fine workmanship displayed in the manufacture of

such wares. Not even the Chinese, adepts though they be, can surpass the natives of Vizagapatam for chaste, and rich taste and exquisite finish. Desks, ladies' work boxes and work baskets, watch stands and paper-weights, are a few among the variety of articles exposed for sale by the ingenious natives. The following is a description of a workshop where these articles are manufactured :—The women are divided into different classes or grades according to their skill and acquirements. The young men new to the trade are simply employed sawing and shaping the wood into different forms and sizes, adapted for the skeletons or framework of the various articles manufactured; those a step more advanced collect and sort these pieces according to the instructions of an overseer ; joiners then take them in hand and join them, putting in additional ribs where strength and durability are requisite ; fine workmen are meanwhile occupied in forming in their lathes the costly and richly scented sandal wood, which is used for lining the whole of the interior of the boxes, divisions, drawers and all ; whilst others are shaping and carving the ebony and ivory, serving as tasteful borderings to the work ; and after these in importance come the pickers, sorters, and polishers of the quills, on whose dexterity and precision as to size, color, and strength, much of the beauty and excellence of the work depend. The skeletons or framework being put together, they are then separated into different partitions, desks being allotted to men peculiarly skilled and well practised in their formation ; work boxes to another set, and so on throughout. Each framework is placed in a basket, together with the quills, sandal wood and ebony or ivory binding, all picked, worked and polished for immediate use. The head workmen have nothing to do but to put them together. The quills are first taken in hand, which with the assistance of a large caldron of glue, always on the boil, are speedily stuck into the numberless gimlet holes, ready drilled for their reception ; and so closely are they put together, that on the nearest inspection one can with difficulty discover space sufficient for a hair to intrude between them. Thick coarse brown paper, ready cut in long narrow slips, is then stuck with glue to the inside ; and against this, in turn, is attached the sandal wood, which constitutes the lining. The ivory or ebony borders are then, by the same process, fastened on ; and the whole being bound together with thick layers of twine, the boxes and their covers (which are yet in want of hinges, partitions, locks, &c.,) are laid aside on a shelf to dry till the next day. When perfectly dry, the twine is taken off, the partitions are let in, and the boxes are handed over

to a silversmith, who completes the work by adding the necessary little silver hinges and small silver knob, to the covers of the different small compartments of the box, and the indispensable silver lock and key. This done, the boxes undergo a thorough scrubbing and polishing, and are then sent to a magazine, or store house, where they are carefully kept, wrapped up in silver paper till a favorable opportunity occurs for disposing of them. The ladies' work boxes, in addition to all the foregoing processes, pass through the hands of a looking glass manufacturer, who gives a finishing stroke to their elegance by the insertion of appropriately sized glasses in the lids of the boxes, which are neatly framed in satin wood.

IRON.

The process of smelting in India is as follows :—In a perpendicular circular furnace about 6ft. or 8ft. in height, and of a diameter at its greatest width of about 18in., the blast to which is supplied by the alternate inflation and compression of four or six goat skins worked by hand, as in the ordinary smiths' fires of the country—the black magnetic oxide so common in the laterite formation, is converted, not into cast iron but rather into a mass somewhat similar to the loup of the Catalan forges, presenting in parts a crystalline and in others a fibrous fracture. The removal of these lumps—mootees they are called by the natives—or loups, necessitates the breaking open of the whole of that part of the little furnace which corresponds to the timp and fore hearth of an English blast furnace; and in order to prepare for this the charging at the top is stopped, so is also the blast, and the whole contents allowed gradually, as combustion exhausts itself, to sink down into the hearth, whence, when cool, it is removed. These loups or mootees are generally from 10lb. to 112lb. in weight.

DACCA MUSLIN.

The division of labor is carried to a great extent in the manufacture of fine Dacca muslins. In spinning the very fine thread, more especially, a great degree of skill is attained. It is spun with the fingers on a *takwa*, or fine steel spindle, by young women, who can only work during the early part of the morning, while the dew is on the ground; for such is the extreme tenuity of the fibre, that it will not bear manipulation after the sun has risen. One *retti* of cotton can thus be spun into a thread eighty cubits long; which is sold by the spinners at one rupee eight annas per sicca weight. The *ruffagars* or darners

are also particularly skilful. They could remove an entire thread from a piece of muslin, and replace it by one of a finer texture. The cotton used for the finest thread is grown in the immediate neighbourhood of Dacca. Its fibre is too short, however, to admit of its being worked up by any except the most wonderful of all machines—the human hand.

The art of making the very fine muslin fabrics is now lost—and pity it is that it should be so. In 1820, a resident of Dacca, on a special order received from *China*, procured the manufacture of two pieces of muslin, each ten yards long by one wide, and weighing ten and a half sicca rupees. The price of each piece was one hundred sicca rupees! The annual investment for the royal wardrobe at Delhi, absorbed a great part of the finest fabrics in former times.

The extreme beauty of some of these muslins was sufficiently indicated by the names they bore; such as *Abrowan*, running water; *Shebnem*, evening dew, &c. In 1823-4 cotton piece goods, mostly coarse, were valued at 14,42,101 rupees; in 1829-30, the value of the same export was 9,69,952 rupees only. There was a similar falling off in silk and embroidered goods during the same period. The cheapness of English cloths has driven the products of Dacca looms, as well as all other Indian looms, almost entirely out of the market.

The first falling off in the Dacca trade, took place as far back as 1801, previous to which the yearly advances made by the Honorable Company, and private traders, for Dacca muslins, were estimated at upwards of twenty-five lakhs of rupees. In 1807, the Honorable Company's investments had fallen to 5,95,900, and the private trade to about 5,60.202 rupees. In 1813, the private trade did not exceed 2,05,950, and that of the Honorable Company was scarcely more considerable. In 1817 the English Commercial Residency was altogether discontinued. The French and Dutch factories had been abandoned many years before.

TOBACCO.

If the smoking of tobacco in any form may be said to be an acquired taste, more especially may a liking for cigars of Indian manufacture be so described. European smokers on arrival in this country, almost without exception condemn Indian cigars known familiarly as Trichis, Burmahs, &c. Yet, in numberless cases before they have completed their first year of residence here, they have taken to the tobacco of this country in preference to that of Havanah, Cuba, Manilla or elsewhere. The exceeding cheapness of Indian tobacco is,

doubtless, the reason which first induces the new comer to try it; but by the time he has smoked his first box of cheroots, he has realised that it assuredly has other good qualities besides its low price; that its effects are not hurtful, and that it is unadulterated; while to its flavour the smoker soon becomes so partial, that if Havanah tobacco were offered him at the same price as Indian, he would prefer the latter.

In tobacco growing, some rotation of crops is advisable, and cultivators seldom grow it on the same land for more than two consecutive years. The cultivators generally precede their tobacco crop with one of *Batatas edulis* (*Sakarkand*), which is extensively used as food, during several months of the year, by the poorer classes, and is sown in the rains and dug up in the cold weather. The land is then well "hoed" up, and manured with cow dung, then ploughed twice a month, and, when the rains cease in the month of September, is ready for sowing with tobacco. The following February or March, the crop is ready for cutting, and the yield from twelve to twenty maunds per acre, selling generally at from Rs. 5 to Rs. 8 per maund.

PAN LEAF.

The Pan leaf, which is in general use among all classes of Natives, and is chewed by them with *suparee* (betelnut,) is the produce of a creeping plant, which has been denominated a vine. It has a light green color and sub-astringent taste. In using it, a few bruised pieces of the arica nut, with two or three grains of *ilachee* (cardamom), and a small proportion of carbonate of lime, are wrapped up in one of the leaves of the plant; and the condiment put in the mouth and chewed.

In the cultivation of the pân, both wind and sun are carefully excluded, and cool shade preserved for the young plant. The ground is ploughed and manured with horse dung, and smoothed with the harrow. Seeds of the *sheoga* (hyperanthera moringa,) *hutga* (coronila grandiflora) and *neemb* (melia azadirachta) trees are sown in the ground, which grow up as the future supporters to the plant, and serve after the manner of hop sticks in England. When these have attained a foot or two in height, pân slips are planted near each supporter, and from this date frequent irrigation of the ground becomes necessary. The remaining operations are training the pân to its supporter, renewing the red soil and repeating the manure once a year. The pân plants are deemed most valuable during the sixth or seventh year; they yield for nine for ten years.

BED MOOSHK.

This member of the willow tribe yields highly aromatic and fragrant flowers, the plant of which is well known in Lahore under the name of "Bed Mooshk," and is described by oriental medical authors under the appellation of "Khilof Bulknee."

About two years subsequent to the conquest of the lovely Valley of Cashmere, by the forces of the late Maharaja Runjeet Sing (Anno Hegira 1235), its then Governor, Sirdar Hurree Chund, amongst other things sent a number of "Shushas" of the "Uruk-ee-Bed Mooskh," as a present to the Maharaja; the fragrance of the distilled liquid, with the high encomiums that were lavished on its real or supposed virtues, attracted the Maharaja's attention, and he naturally became anxious to have the trees introduced into Lahore. Sirdar Hurree Chund, being apprised of the Maharaja's intentions, at the proper season, sent down a number of the cuttings of the trees from Cashmere (where the plant is indigenous) with persons that knew well its habits, and mode of cultivation. On their arrival at Lahore, the people were ordered to select a suitable site for a plantation in the vicinity of Lahore. The vast track of the low khadur land, which lies between the river Ravee and its nullah, was approved of by the judges as being most favorable for the growth and thriving of this justly esteemed plant; especially on account of that piece of land retaining moisture and humidity throughout the several seasons of the year. The cuttings were planted, and then the Maharaja bestowed them on the agriculturists, upon the condition, that the latter were to take care and preserve the plants, and that the produce—the flowers—were only to be sold to royalty.

The highly esteemed "Uruk-ee-Bed-Mooshk" is obtained by distilling the flowers fresh gathered, with addition of water. No novelty is used in the process of distillation beyond the apparatus resorted to by the natives, being in their rude and primary state. To every maund of the flowers, two maunds of the water being added, they are steeped for a short time in the big "degchee," used as a still, the mouth of which is then covered (and luted down with flour paste so as to prevent any steam getting out) by a circular earthen vessel called a koonalee in Punjabee—and gamla in Hindoostanee—this vessel has a hole in the centre, in which is fixed and luted a bamboo pipe, made up by joining two pieces of bamboo at right angles, and outwardly well covered by coiled ropes and tow, over which is put on a coating of soft tenacious clay; this pipe serves as a conductor of the steam, and is joined at the other end to the mouth of a copper receiver, in which is collected and condensed the steam

caused by the application of heat to the big "degchee," first mentioned. This degchee is fixed in an oven or furnace, and on one side of the furnace is fixed a tub in which the copper receiver is placed. While the process of the distillation is going on, the tub is filled with cold water, which is changed as often as the tub gets warm; so that by a constantly reduced temperature, the steam is condensed, prevented from evaporating, and made to assume a liquid form. The degree of heat necessary during the process of distillation is that at the commencement of the operation it should be rather strong, and afterwards to be reduced—a gentle heat being kept up throughout the process.

From a maund of the flowers, distilled with the quantity of water specified above, from 10 to 15 seers of the best description of water is obtained, whilst the druggists and atars (vendors) of the bazaar obtain even a maund of the inferior description.

KUKUMB-KA-TEL, OR CONCRETE OIL.

This substance, which possesses some very peculiar properties, is the concrete oil of the wild mangosteen, a tree which is common in some parts of the Southern Konkan. The fruit ripens in April and May; is small and of a flattened globular form. The rind or shell is about ⅛th of an inch in thickness, of a deep crimson colour, and intense acidity. Within this, but without adhering to it, is contained a pulpy moss, in which the seeds are imbedded. The oil is extracted from the seeds by boiling. They are first exposed for some days in the sun to dry, and then pounded and boiled in water; the oil collects on the surface, and on cooling concretes into a solid cake. When purified from extraneous matter, the product is of a rather brittle quality; of a pale yellowish hue, the shade inclining to green; exceedingly mild and bland to the taste, melting in the mouth like butter, and impressing a sensation of cold on the tongue, not unlike what is experienced on allowing a particle of nitre to dissolve on the tongue.

The quantity of the concrete oil that may be obtained from the seeds may be taken at about one-tenth. From ½lb. avoirdupois or 3,500 grs. of the seeds, were obtained 360 grs. of the concrete oil in a moderately pure state. The above is somewhat more than 1-10th; and with better management, the product might perhaps be greater. It requires, however, long continued boiling to extract it, and it is still more tedious to purify it from the fibrous matter of the seeds.

BARILLA, THE PRODUCT OF THE SUJJEE PLANT.

Sujjee, which is a preparation from a plant bearing the same name, is of three qualities. The first is called the *Choa*, the second *Rootha*, and the third *Khara*. All three qualities are produced at the same time. and from essentially the same process of manufacure.

The plant is cut during the months of October November, December and January. When cut, it is allowed to dry for 20 days, and then put into a pit about 3 feet deep and one yard in diameter; having an excavation at the bottom to admit of an earthen pot being placed in it. Into this is put at inverted *ghurra*, with an orifice, half an inch in diameter, at the top. The orifice is kept closed at first. Into the pit is thrown a small quantity of the plant, and burnt, fresh plant being gradually thrown in to keep up a constant fire; and this method is pursued till the pit fills up. During this process a liquid matter exudes from the plant. As soon as this is observed, the orifice of the *ghurra* is opened, and then the liquid matter and ashes are stirred up together. A long stick, pointed at the end, is held at the opening in the *ghurra*, so as to guide the liquid matter into the orifice. The liquid that passes in to the *ghurra* is called the *Choa*, or first quality sujjee; that which remains over the pot and under the ashes, is the *Rootha* or second quality. and that on ths surface of the pit is the *Khara Sujjee*, or *third quality*.

After the above process is completed, earth is thrown over the pit, and it is allowed to remain in this state for four days, or for a longer period till the sujjee hardens in the pit.

The sujjee of the first quality or *Choa Sujjee*, is of a light red colour, and sells at the rate of two rupees per maund. The second or *Rootha Sujjee* is of a dark greyish colour, and sells at the rate of one rupee eight annas per maund: the third quality, or *Khara Sujjee*, is of a blackish colour, and sells at eight and a half annas per maund. The traffic in this article at times is very great, and large quantities are exported to Europe.

STONE.

It is well known that India abounds with stone, much of which however is of indifferent quality, and hardly worth the trouble of quarrying; but the far greater quantity is of excellent quality, and has been used from time immemorial in the erection of those vast mementos of India's former greatness that exist to the present day, and which exhibit, by their resistance to the crumbling effects of time, the durability and excellence of the materials used in their formation.

Jeypore and Joudpore have always been celebrated for their beautiful white marbles; while Chunar, Mirzapore, Delhi and Agra are equally known for their freestones, and Bhurtpore and Gwalior for their excellent red and white sandstones.

Almost all the buildings of any extent in the upper provinces of India are built principally of sandstone and marble intermingled, or in alternate layers. Timber in ancient times was hardly ever used, except for doors; the lintels and beams, and even the internal ornaments of houses being formed of marble or other kind of stone.

Very little of the Futtehpore stone is used for building purposes, such as beams, pillars or architraves, requiring to bear much weight; it is sometimes hewn into squares for erecting rough walls with, instead of brick, or into cylinders for well bottoms, and other small articles of domestic use.

In connexion with the Futtehpore quarries, it may be of use to notice the neighbouring ones in the Bhurtpore territory, at the villages of Puharpore and Singowlee. The stone quarried at these two places, especially Puharpore, is of superior quality; it is extensively used in building, and taken to all parts of the country in various forms both light and heavy.

Great quantities of stone from Bhurtpore are annually taken to Bindrabun and Muttra for building Hindoo temples, dwelling houses for the native gentry, ghauts, &c.; and a good deal is also brought into Agra, and thence in the way of trade, taken by water to other places up and down the Jumna.

In the Mirzapore district there were in 1847, 283 quarries open.

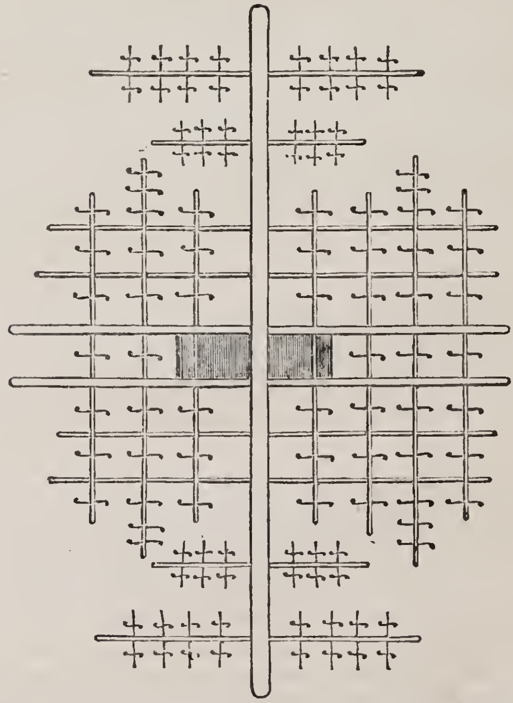
There are three sorts of stone found in the Allahabad district, two of which find their way to market in a manufactured form. The former are termed *golabee* and *sufeid*, the latter *dhoka*, which is used in the lump as foundations for walls. No stone is sold in the neighbourhood of the quarry or river, but is brought to Allahabad, which is the only mart for it.

The fort of Allahabad and other old buildings in the city bear testimony to the durable and excellent qualities of the *sufeid* and *golabee* stone for buildings. One sort called *dhoosur* is decidedly bad for these purposes, and is speedily destroyed by salt, as would appear from the rapid destruction taking place in the magnificent Baolee attached to Sultan Khosroo's garden.

The quarries in Banda are on the same footing as those in Allahabad and Agra.

There is a species of limestone found in the village of Kootla, on the border of the district of Banda, from which lime of a superior quality is made in the village of Goorampore.

As the facility with which large masses of stone are moved without mechanical aid in the quarries noticed above, may not be generally known, and as the method adopted may aid in forming a solution of the difficulty in accounting for the construction of the pyramids, and other ancient buildings, we here subjoin an account of it, and at the same time give a representation of the stone cradle used by the natives :—



" A large stone of almost any size, is fastened securely on each side to two long and strong poles or beams, which extend a considerable distance in advance and behind it; on these are again bound cross pieces, and on them other short cross-pieces, to which the bearers apply their

shoulders as in carrying a palkee. The poles are prolonged by additional ones being tied on, and the cross-pieces extend according to the weight of the stone. If very weighty, in addition to the poles lengthways, others are placed across it with thin cross-pieces, which can also be extended to any amount proportionate to the weight; so that there is no stone, of whatever weight, used in building, that could not be carried along any distance without any other apparatus being necessary than an extension of the cross-pieces, and if thus once raised, that could not in like manner be carried up an inclined plane, and deposited as they are in the pyramids, &c. It is calculated that on an average the apparatus weighs half as much as the stone itself."

ALUM.

The alum pits at Melir in Kutch have been worked for the last century. They are said to have been first opened by a Musulman in the reign of Rao Goharji,* who accidentally tasting the earth became convinced that some profit might be derived in extracting the saline particles from it. He disclosed his secret to a relative at Nalia, a merchant who had carried on an extensive trade with Bombay and other parts; and being directed by *Asapúsa* in a dream, they succeeded in their first experiment of fabricating alum. The manufacture of this article was carried on secretly for a few years, until stopped by Rao Goharji on hearing of the advantage which government might secure to itself by taking the management of the concern into its own hands. He was however induced to leave it to the Musulmans, receiving from them a certain portion of the profits, placing a servant there to superintend the sale of the alum and report on the progress made in manufacturing it.

The finer native alum is called by the workmen *Tejim Túr*, from the acicular crystals. The coarser kind is *Melta*. The first undergoes a process differing from the latter, though this may be, and is, also manufactured in the same way. It is taken to some square beds, and by the aid of a small running stream of water, strongly impregnated with alumina and iron, and thinly laid down; over it some red burnt earth of the worst kind of volcanic aluminous ore is thrown; this is called *Banna*, and the scrapings of these beds, after the contents have been removed, or *Bakki*, mixed up with it. The water drills through the banks and moistens the earth, or is

* Rao Goharji mounted the throne in 1716 A. D.

sprinkled over in small quantities. It remains in this state for 15 days, when it exhibits an efflorescence of sulphate of alumina, and is called *Rejri Turi.* This is carried to some distance, where the sheds and boilers, and other instruments for manufacturing the article are, and is there cast into large boilers with the mother water, well stirred up, till it is liquified, and then a certain proportion of *Shora-Khar* or nitre thrown into it; during this stage of the process, the sulphur seems to evaporate and the sediment or earthy particles being taken out, the whole is drawn off into small open mouthed earthen jars, where it settles for three days and becomes *Kanni,* apparently the pure salt of alum, mixed up with earth : when dry it is again thrown into a boiler, and boiled for hours with little or no water added to it; in its liquified state, it is called *Ras,* and being poured into earthen jars, goes into its last stage of crystallisation, called by the natives *Phaltakári.*

ISINGLASS.

The very valuable production isinglass, is yielded by a fish called *Polynemus,* a species which is very common in the estuaries of the Ganges, and to be often found in the Hooghly off Calcutta. There are nine species of *Polynemi* or Paradise fishes enumerated by authors, all well known as an excellent article of food, of which we have a familiar instance in the mango fish, to which the Polynemus is very similar; but it differs in one great essential. The air vessel which is absent from the mango fish, and on which the peculiar value of this species seems to depend, is a large spindle shaped organ about half the length of the fish, thick in the middle and tapering toward the extremities, where it ends in front by two, and behind by a single tendenous cord; similar small tendenous attachments, about twenty-two in number, connect it on either side to the upper and lateral parts of the abdominal cavity. This organ which is called the sound, is to be removed, opened and stripped of a thin vascular membrane which covers it both within and without, washed perhaps with lime water and exposed to the sun, when it will soon become dry and hard. It may require some further preparation to deprive it of its fishy smell; after which it may be drawn into shreds for the purpose of rendering it the more easily soluble. A fish which weighs about two pounds may be expected to yield about sixty-five grains of isinglass, not quite pure but containing about ten per cent. of albuminous matter. The solution after being strained and ready for the market will sell for from twelve to sixteen rupees a pound.

MHOWA—DAROO.

The Mhowa (Bassia Latifolia) is found in Bombay and Bengal, and is of importance as affording food to the poorer classes of natives, more especially to such improvident races as the Bheels, Koles and Sonthals. As the crop of Mhowa approaches ripeness, the corollas, becoming fleshy and turgid with secreted juices, gradually loosen their adhesion to the calyx and fall to the ground in a snowy shower. The fallen blossoms are carefully collected, generally by women. When perfectly dry the blossoms have a reddish brown color. These after having the little ring of foliaceous lobes which crowns the fleshy corolla removed, are spread out to dry. The mhowa is seldom eaten alone; being generally mixed with seeds of saul (Shorea Robusta) or with the leaves of saug. The cooking is thus performed. The saul seeds having been previously well dried in the sun, are roasted, and then boiled alone; the mhowa flowers are then also boiled, and the water thrown away. The mhowa and saul are then mixed and re-heated; sometimes a small quantity of rice is added. When fresh the mhowa has a peculiar luscious taste, with an odour somewhat suggestive of *mice;* when dried it possesses some resemblance to the inferior kinds of figs. Cooking renders it vapid and utterly devoid of flavor. On distillation the newly dried flowers yeild a highly intoxicating spirit called *daroo;* which is much drank by the natives.

BUTTER TREE.

There is a tree in India called the "East India Butter Tree." Its botanical name is *Bassia Butyracea,* and it is indigenous to Almorah, and perhaps other parts of the Himmalayas. The tree produces a fat-like substance, known in India by the name of *Phulwah.* The tree is scarce, grows on a strong soil, on the declivities of the southern aspects of the hills below Almorah, generally attaining the height, when full grown, of fifty feet, with a circumference of six. It flowers in January, and the seed is perfect about August, at which time the natives collect them for the purpose of extracting the fatty substance. On opening the seed the kernel appears of the size and shape of a blanched almond. The kernels are bruised on a smooth stone, to the consistency of cream, which is then put into a cloth bag, with a moderate weight laid on, and left to stand, till the oil or fat is expressed, which becomes immediately of the consistency of hog's lard, and is of a delicate white color. Its uses are in medicine; being highly esteemed in rheumatisms, and contraction of

the limbs. It is also much esteemed, and used by natives of rank as an unction, for which purpose it is generally mixed with an *utr* of some kind. Except the fruit, which is not much esteemed, no other part of the tree is used.

BETELNUT.

The betelnut tree is one of the most graceful of the palm tribe. It is a native of all the countries of Asia within the tropics, and is cultivated all over India for the sake of the nut. The tree is in flower most part of the year; its trunk often rises from forty to fifty feet high, but is in general only about twenty inches in circumference, almost equally thick and smooth. The nut is about the size of a hen's egg, enclosed in a membranous covering, and of a reddish yellow when ripe. The tree has no branches; but its leaves are very beautiful forming a round tuft at the top of the trunk. There are two crops in the year; the quantity of nuts yielded by a single tree varies considerably in different places: on the Coromandel coast the average number of nuts obtained from a single tree is usually about 300.

The betelnut is dried, cut into slices, usually four; these slices are wrapped up in the leaf of the black-pepper vine, and sprinkled with quicklime, termed by the natives *chunam*. Thus prepared it is chewed, and is enjoyed by the people as an universal luxury. What the benefits are to be derived from this preparation it would be hard to say. The nut, which has a harsh astringent flavor, is never eaten by itself; but in conjunction with the hot pungent leaf of the black-pepper vine and the quicklime, it is much relished. The chewing of the betel provokes much spitting of a reddish colored saliva; and the Indians have an idea that by this means teeth are fastened, the gums cleansed, and the mouth cooled.

STEEL.

The discovery of steel by the Hindoos appears one of the most astonishing facts in the history of the arts; it seems too recondite to be the effect of chance, and yet can only be explained by the lights of modern chemistry. In Europe the case was otherwise. In the early times, repeated hammering after refining, appears to have been the only process; and cementation by charcoal was not adopted until chemical investigation had shown that steel was a compound of iron and carbon.

The ore used in forming iron and steel is the magnetic oxide of iron combined with quartz, in the proportion of 52 of oxide to 48 of quartz. It is prepared by stamping, and then separating the quartz by washing or winnowing. The furnace is built of clay alone, from three to five feet high, and pear-shaped; the bellows are formed of two goat-skins, with a bamboo nozzle, ending in a clay pipe. The fuel is charcoal, upon which the ore is laid, without flux; the bellows are plied for four hours, when the ore will be found to be reduced: it is taken out, and when yet red hot, cut through with a hatchet, and sold to the blacksmiths, who forge it into bars and convert it into steel. It is forged by repeated heating and hammering, until it forms an apparently unpromising bar of iron, from which an English manufacturer of steel would turn with contempt, but which the Hindoo converts into cast steel of the very best quality. To effect this he cuts it into small pieces, of which he puts a pound, more or less, into a crucible, with dried wood of the cassia auriculata, and a few green leaves of the asclepias gigantea. The air is then excluded by a cover of tempered clay rammed down close into the crucible. When dry, about twenty crucibles are built up in a small furnace, covered with charcoal and heated for two hours and a half, when the process is complete. The quality of the steel is excellent, but the process of smelting is so imperfect that of 72 per cent. of which the oxide is composed, only 15 per cent. of iron is obtained by the natives.

THE SNAKE STONE.

The snake stone is well known throughout the East as a supposed antidote against poison, particularly the venom of snakes. It is of two kinds, one of animal, the other of mineral origin. Three sorts of the mineral snake stone are procurable in the Himalaya—one is found with detritus, in a cave in Jawahir, leading into the valley of the Sutlej; it is of irregular form, smooth surface, and of an olive green colour: from its chemical characters, it seems to be a new mineral, consisting chiefly of silica. Other kinds are met with in the bazar at Hurdwar, and, although differing in external characters, are essentially the same—one is of a bright greenish colour, and the other a dull green; they also vary in specific gravity, but they are both considered to be varieties of serpentine, a name which has been given to a mineral substance, without any satisfactory reason, and which may be connected with the term snake stone, pierre de serpent, &c., attached to the zehr mohereh of the East, as an antidote against the venom of snakes.

PRECIOUS MINERALS.

The diamond stands first and foremost among the precious stones of India. In Arabic and Persian works of natural history, Aristotle is generally quoted as the chief authority, whence information is drawn, and the most vague and fabulous tales of the origin and qualities of natural substances are laid to his account. Of the diamond there are mines in the south east of Hindustan, and also in southern India, near Masulipatam; but the great mart for diamonds formerly seems to have been at Kulburgah, to the west of Hydrabad. The diamond is supposed by some to be a preservative from lightning, and to cause the teeth to fall out when put in the mouth.

The ruby exhibits seven varieties of color, viz. 1, striped; 2, hyacinth; 3, bright red, or pomegranate; 4, brass colored; 5, red wine colored; 6, flesh colored; and 7, the assafœtida colored. The ruby is to be found in Ceylon and also at Arracan in the Bay of Bengal. When placed in the fire, a true ruby becomes invisible, but when immersed in water, it appears to glow with heat; it also shines like a coal in the dark.

The sapphire has five varieties; viz. 1, peacock tail; 2, azure; 3, indigo; 4, grey or collyrium; and 5, greenish.

The topaz has four tints, viz., 1, orange; 2, straw; 3, flame or lamp; and 4 citron colored. The last is said to stand the fire better than the others.

The emerald, with the preceding three kinds of oriental sapphire, is to be found only in the island of Ceylon, where it is generated in caverns from the suppuration and solidification of the essence of water. "The natives dig wells in these places, and wash the sand extracted from below for the various minerals which are disseminated in it. The medical properties of this gem are remarkable; it purifies the blood, strengthens, quenches thirst; it dispels melancholic reflections; and as a talisman averts dangers, ensures honor and competence." In hardness it only yields to the diamond; it is unaltered by the fire, the red and yellow varieties, if anything improving in color therefrom. The blue or sapphire, when pure, is of equal value with the diamond. The Arabs are fond of engraving their names upon it.

Concerning the Spivelle Ruby there is considerable incertitude among oriental authors. Some state it is obtained from a kingdom "between Pegu and Bengal"—and others from Balkh, the capital of Badakshan. The Persian authors

are particular in their description of the locality and origin of this stone. "The mine of this gem was not discovered until after a sudden shock of an earthquake in Badakshan had rent asunder a mountain in that country, which exhibited to the astonished spectators a number of sparkling pink gems of the size of eggs. The women of the neighbourhood thought them to possess a tingent quality, but finding they yielded no coloring matter they threw them away. Some jewellers, discovering their worth, delivered them to the lapidaries to be worked up, but owing to their softness, the workmen could not at first polish them, until they found out the method of doing so with marcasite on iron pyrites." The ruby has many colors, red, yellow and greenish; the reddish yellow or onion colored, and the violet colored are held in the highest estimation.

The Turquois is the produce of the mines of Ansar near Nishapore in Khorasan. All authorities concur, that these are the only turquois mines in the world. The stones are said to vary from the pale blue to green and white, but all except the azure are worthless. A curious fact is mentioned in some of the oriental authors. The real blue turquois of Nishapore changes its color when kept near musk or camphor, also from the dampness of the ground, as well as from exposure to the fire; the inferior stones become discolored even without this test, by gradual decomposition or efflorescence. The turquois is said to "brighten the eyes; is a remedy for ophthalmia and bites of venemous animals;" it is also used in enamelling sword handless, &c.

Lapis Lazuli is to be found in Badakshan. The mineral has different shapes; one, like the egg of a hen, which is covered with a thin, soft and white stony coat, is reckoned the best when pounded, it needs neither washing nor polishing; the others are without covering and must be washed. The method of washing is this. "First to pulverize it and afterwards to keep it wrapt in silk cloth, besmeared all over with green sandarack, which should be previously softened in very hot water, and then rubbed over or kneaded with the hands; it is kept in the water for three days, until all the foreign matter has been washed out."

CHAPTER XIII.

BANIANSHIP IN CALCUTTA.

The word "Banian," says the *Bengal Magazine* (to which we are indebted for this information,) is a corruption of "Bania," which again is derived from "Banik," a merchant. In the earlier days of the East India Company, as the sheristadar of the Judge's and Collector's Courts, and of the salt and commercial agencies, was called *Dewan*, so the native manager of an English Agency House and of a ship-captain, was called by the natives *Mutsuddi* and by the Europeans Banian. In fact the Banian in old times was the factotum of houses and captains, and from the absence of any European banking establishment, had the sole charge of all their monetary transactions.

In those days the captain, officer, doctor, and even the carpenter and gunner of the Company's Indiamen, used to bring out from England investments of their own for sale at the several presidency towns in India. A native agent, who could make himself understood both to the seller and purchaser, was requisite for negotiating for the houses and captains. The high caste Hindoo who had picked up the little broken colloquy in English, which was a sort of prerogative to him, was the only man then qualified for undertaking such an office of responsibility. But as the investments of the captains and others comprised wines, liquors and provisions among other articles, the high caste Hindoo of Calcutta, till the latter part of the last century, from a religious scruple, kept aloof from managing them for their owners.

What was then the alternative left to them? The shippers found that the only Hindoo (a Mahomedan being out of the question) who was capable of imparting his thoughts by words was a washerman, domiciled near Colootollah in Calcutta. Recourse was of necessity had to his agency for carrying out the details of the business. This washerman was now trusted with the more responsible duty of an agent to buy and sell for his employers. The *dobus*, as he was called in Bombay and Madras as a synonym of Banian, was then

seen hawking in the market from door to door, with the bundles of clean suits on one hand, invoices of beer, wine and liquor, and of ham and cheese on the other. Dobus' negotiations failed not to secure the approbation of his masters. But unfortunately, as might be imagined, he struggled under a difficulty not easy for him to overcome. Dobus was no man of letters, and hence it was indeed a hard job for him to convert pounds, shillings and pence into rupees, annas and pies. As, however, his new post was very lucrative, he thought it advisable for his interest to take in partners of a greater calibre than himself. Three artizans equally situated in society, were invited to co-operate with him. They cheerfully joined him, and set up a firm under the style of *char yar*, (four friends.)

It may not be deemed out of place to mention here that the commanders of the Company's merchantmen and their officers were one and all either the connections or protegés of the members of the Court of Directors. These seafaring gentlemen were often the sons of wealthy and respectable fathers, and had extensive credit with merchants, brewers and manufacturers of England, who courted their custom and patronage. As the result of the authorized speculations of the captains and others during the Company's monopoly, was flattering enough, they largely extended their imports, and invested the proceeds of sale here in country produce when returning home direct. This extension of their operations brought on unexpected good luck to the "four friends," blessed as they were with the services of all the captains and officers who visited the port of Calcutta.

The rich harvest which they reaped failed not to attract the notice of their more respectable neighbours, and to rouse their jealousy. Irresistible was their temptation, and caste prejudice at length gave way to love of lucre. Legions of high caste Hindoos of all denominations appeared in the field of dobus-ship, and proffered their services to the pursers of the captains, who acted on board both for the owners of the vessels and captains, and the applications were readily accepted for the sake of their greater respectability and intelligence. The sobriquet "dobus" was then changed into the more signifying teım "Banian."

After the abolition of the Company's monopoly, several of the captains and pursers set up or joined commercial houses at Calcutta, and the identical banians, who had served them before, served them again in their new vocation of merchants and agents.

CHAPTER XIV.

CALCUTTA IN 1857.

The river Hooghly has an interest of its own. The broad reach with its strong tides is visible for eight or ten miles. It is crowded with vessels drawn thither from all parts of the world. A hundred and fifty ships and fifty steamers constantly occupy the berths and moorings. At the north of the city cluster the salt sloops; the huge inland trading galleys, with their banks of rowers; or the long painted pattamars of Western India, planned centuries ago, with huge eyes at the bows; while every where the small green boats, loved by Englishmen, or the native matted dingies, with their long steering oar and over-hanging prows, ply up and down the crowded waters. with their varied burdens.

Calcutta extends along the Hooghly for seven miles, and is in parts rather more than a mile wide; its eastern and western sides are regular, the ends are slightly rounded and the city covers a space of about eight square miles. Its outer boundary is the broad "Circular Road;" three other principal roads run through its entire length, and the shorter roads or streets cross them at right angles.

The English quarter occupies the south end of the city. Here a beautiful plain, a mile and a half long, goes down to the water's edge, having Fort William in the centre on the river bank. The plain is always green; it is level and is dotted with fine old trees; and several parts of it has large ponds of water. On its inner sides the plain is bordered with the houses of the English, with their white walls, broad verandahs, and green venetian shutters; from which Calcutta derives its lofty name "The City of Palaces." The High Court, the Town Hall, the Treasury, and the Government House face the plain on the north. On the east side are the numerous English houses of Chowringhee, lately augmented by the handsome cluster of Victoria Square. Behind the Town Hall and Government House, towards the north, are the lawyers' chambers, the merchants' offices, the banks, English shops and stores, the libraries, the Post Office and the Custom House; many of them clustered round

the broad pond and gardens of Tank (now Dalhousie) Square.

The native town occupies nearly six square miles of the entire city; it fills all the northern end, and runs to the south along the back of the English quarter. In appearance it has little to boast of. A city of brick, with its houses often out of repair; for beauty, regularity, and ornament, it is not to be compared with Benares and Delhi, the handsome stone cities of Upper India; and is much inferior to many parts of Bombay. Except a few trunk roads of English make, the streets, roads and lanes are narrow; and overshadowed by the lofty walls and verandahs of straggling dwellings.

The twenty bazars and markets are crowded. The Burra Bazar, apparently ready to fall to pieces and crush buyers and sellers in the ruins, is stored with the most precious fabrics that upper India can produce. The opium bazar is crowded with red turbanned Rajpoots and Bombay Hindoos, who devote themselves to speculating in that drug. All the roads and streets, destitute of pavement, are lined with shops which are innocent of glass fronts and windows; and which exhibit, without protection from dust, piles of brass vessels, bundles of slippers and shoes, gorgeous tin lanterns, bales of cloth, mats, stools, and cane chairs; vast piles of red pottery, pitchers, cups, and cooking-pots; leaf unbrellas; and hillocks of bamboos; posts for houses, small tiles, and straw.

Scattered over the city among streets, narrow and broad, are the family mansions of the native gentry, with their broad central courts, their pillared verandahs, and numerous rooms. Some are palaces in appearance though surrounded by filthy drains; others are sadly out of repair; their walls eaten with saltpetre, their courts full of cast away furniture and heaps of rubbish, or overgrown with huge weeds; and threatening to tumble into ruins. Of still smaller brick houses and shops of mean appearance, the number is about fifteen thousand.

So precious has space become in recent years, that the almost all vacant land outside the gardens of the better houses has been covered with common huts. Of these the city now contains over sixty thousand. Most of them consist of but a single room, which contains a huge chest, a lamp or two, some bamboo or glass oil bottles, and a miscellaneous collection of pots and pans. In the poorest the moveables may be worth five shillings; and in the more respectable abodes may be replaced by from thirty to sixty rupees.

Throughout its entire area the city is dotted with trees, which rise far above the houses, and from the flat terrace roofs present, on a clear morning in the rainy season, a green and pleasant sight. The English quarter has long been celebrated for well stocked gardens, for long lines of casuarinas, tall bushy tamarind, and banyan trees.

The population of Calcutta, of all races, in 1847, by three separate calculations, carefully made, was shown to be 400,000. Since then, while the boundaries have remained the same, the demand for accommodation has multiplied houses, covered vacant spaces, and made the population far more dense than it was then, it is now 500,000. The suburbs have increased in size. Taking a mile all round the city and across the river, in the sixteen square miles thus enclosed, there are ten small towns and villages, and the native population they contain can scarcely be less than 300,000. Calcutta and its suburbs will thus contain 800,000 people, of this great population, larger than that of any city in the English empire except London itself, about 30,000 are English, German, or American, and may be called the Christian population. The entire remainder are natives of India, and must be numbered among Mohammedans or Hindoos.

The European community have seventeen Protestant churches, one Armenian, one Greek, and six Roman Catholic. Of the Protestant churches nine are Episcopal, one Church ot Scotland, one Free Church, two Congregational, three Baptist, and one Wesleyan. The Roman Catholic churches are not exclusively confined to Europeans; two of them in the native town are largely attended by a people called Portuguese, but sprung specially from the slaves of old Portuguese families and the intermixture of Portuguese and native blood. Attached to these churches are thirteen Episcopal chaplains, and two chaplains of the Established Church of Scotland, seven Nonconformist pastors, five Armenian clergy, one Greek priest, and nineteen Roman Catholic priests. Connected with them, are seven or eight sunday schools, a city mission, and four city missionaries. Four other ministers have the care of large and well taught boys' schools for the education of the sons of the Christian population; and with excellent schools also for their daughters.

Thus separate from their Christian rulers, the native population of Calcutta follow their own religious faiths. Within the city probably 70,000 or 80,000 are Mohammedans, and 400,000 are Hindoos. The suburbs will add more than 20,000 to the latter, and a few thousands to the former.

There are fourteen native churches, containing five hundred communicants, and a nominal Christian community of one thousand six hundred individuals.

In 1822 a census was taken of the inhabitants of Calcutta, when the following returns were sent in :—Christians 13,138 ; Mahomedans 48,162 ; Hindoos 118,203 ; and Chinese 414 ; or a total of 179,917. From the statement given above it will be seen how greatly the population has increased during the thirty-five years subsequent to 1822.

CHAPTER XV.

TWENTY YEARS SUBSEQUENT PROGRESS.

[Though it is somewhat beyond the original intention of this work to notice subjects connected with the Government of India after it was transferred to the Queen, still it seemed important to us to wind up with what Dr. Forbes Watson says, of the progress made during the subsequent twenty years, by a more liberal administration than that of the East India Company.]

In these past twenty years, India has undergone a profound transformation. Two causes have mainly contributed to bring about this result—the gradual progress of education, and the extraordinary development of the means of communication. The expenditure on education, as far as the Government is concerned has increased fourfold, and now exceeds a million sterling in the year, and the number of pupils has increased from about 200,000 in 1857, to about 1,700,000, and is rapidly increasing. Small as this number may seem, it being below 1 per cent. of the population, it shows extraordinary progress, and proves that education is beginning to affect the masses. At any rate, it compares favourably with the number in other semi-civilised countries; the school attendancein Russia is about the same.

The progress of education in India is also shown by the increasing number of graduates of the Universities of the three Presidencies, and the large number of pupils in the special engineering, art, and medical schools; and equally striking is the rapid growth of the native Press and literature. But the results of the progress of education are at present valuable chiefly as the promise of a better future, when the present generation shall have grown up.

The changes wrought by improved means of communication have been, on the other hand, almost instantaneous, and have already transformed the whole face of the country. The length of railways open in 1857 was 274 miles; in 1876 it had become 6497 miles. The passengers carried in 1857 were 1,825,000; there were 26,779,000 in 1875. The miles of telegraphs increased from 4162 miles to 16,649 miles; the letters and packets conveyed by post from less than 29 millions to more than 116 millions in the year.

The opening of the Suez Canal in 1869 also marks a turning point in the trade of India and the East generally. The revenue of India has advanced from £31,691,000 in 1857 to £55,422,000, Imperial and provincial, in 1877; the expenditure from £31,609,000 to (estimated) £61,382,000 in 1877. The excess of expenditure over income in 1877 is due partly to the famine and partly to the outlay on remunerative public work.

Adding together the cost of public works, of education, and of surveys and other scientific operations, we find about £10,000,000 now yearly spent by the Government in India for the permanent improvement of the country and its people.

The trade and shipping returns show a vast increase in wealth and prosperity. The tonnage entered and cleared in the foreign and coasting trade was 4,549,000 tons in 1857, and rose to 9,887,000 tons. The value of the imports was £28,608,000 in 1857, and £48,697,000 in 1877; of the exports £26,591,000 and £62,975,000 respectively. These figures include treasure as well as merchandise.

The imports of treasure amounted in the twenty years, 1858-77, to £267,582,677, but the exports of treasure to only £28,804,567, showing an increase in the precious metals of nearly £239,000,000 or about £1 for every head of population in the whole of British and Native India. The imports of merchandise have risen from £14,000,000 to £37,000,000 in the twenty years, an increase of 168 per cent.; the exports of Indian produce and manufactures from somewhat over £25,000,000 to £59,000,000, an increase of 133 per cent.; the total of imports and exports of merchandise showing an increase of 140 per cent.

While the trade of India has thus increased in volume, it has completely changed in character. Many of the old staple articles of Indian trade continue stationary, or are even declining. This is the case with silk, and silk manufactures, formerly such an important item in Indian exports; in fact, in the current year there have actually been more silk and silk manufactures imported into India than exported from it. A like decrease may be observed in the export of Cashmere shawls and other woollen manufactures, and also in saltpetre, another characteristic Indian produce. The export of sugar also has largely decreased. India being beaten by Mauritius and other plantation colonies in international competition; but her internal consumption of sugar is enormous, and its cultivation still holds the first rank in

Indian agriculture as the most valuable crop, the various grain crops alone excepted. The best ground is devoted to it, and the total value of sugar and molasses annually produced in India is probably not less than about £20,000,000, or considerably more than the value of the cotton crop,

On the other hand, a gigantic trade has sprung up in articles which were formerly of very small importance. They belong mainly to three classes. There is, first, the bulky agricultural produce which, in consequence of the improved means of communication, can now be thrown upon the markets of Europe. The trade in grains and seeds of all kinds sprang up about the time of the Crimean war, in consequence of the closing of the Russian ports, from which the main supply had been derived. The total trade in grains and seeds increased in value from £3,885,000 in 1857 to £13,560,000 in 1877, or about 274 per cent.

The most extraordinary development is shown in the trade in wheat, now approaching two millions sterling. The export of hides and skins also shows considerable progress, and the export of opium has risen from £7,057,000 in 1857 to £12,405,000 in 1877; but this last high figure is due not so much to the prime cost of the article as to the duties placed upon it.

A second group of articles comprises raw textiles, the vegetable and animal fibres, which now form the most important item in Indian exports—namely, cotton, jute, and wool. The exports of these have grown in value from £2,027,000 in 1857, to £15,460,000 in 1877. Of this last sum, raw cotton accounts for nearly twelve millions. In 1835 the Indian exports of cotton shot up to above thirty-seven millions sterling; and notwithstanding the fall in value after the close of the American Civil War, the quantity has been very fairly maintained, and cotton holds its place as one of most important articles of Indian trade. The trade in jute has been entirely created within the last thirty years and has a great future before it. The development of the wool trade is also comparatively recent.

The third group of the new growth of Indian export trade —namely, exotic products recently acclimatised in India by means of European capital and enterprize—is, perhaps, the most interesting. The exports of tea show an increase from £121,000 in 1857 to £2,607,000 in 1877, and of coffee from £133,000 to £1,346,000.

The production of tea in India in the past year is equal to the total quantity consumed in the United Kingdom so

late as in the year 1840. Another exotic, the cinchona, promises to become important. Introduced by Mr. Clements Markham so late as 1861, there are now nearly three millions of trees in the plantations in India, and the Government sales of bark amounted to £29,000 in the past year.

Several other Indian products, such as tobacco and india rubber, also begin to attract attention, and the trade may attain very considerable dimensions. The returns of imports also during the last twenty years should not fail to attract attention, as showing how greatly the consuming power of India has increased. The principal articles are cottons (the cotton manufacture reaching nearly sixteen millions sterling in the last year), woollens, metals, and metal work, machinery and mill work, railway materials, beer, wine and spirits, the increase ranging from 166 to 533 per cent.

In respect to several of these articles considerable progress has been made in establishing manufactories for their indigenous supply. A large and rapidly increasing number of cotton mills has been established in India, and successful attempts have been recently made to manufacture iron on the European method. The output of coal in the Indian coal mines has considerably increased of late, and already supplies some of the Indian railways with the whole of the fuel required. The total area over which coal rocks may be presumed to extend is about 35,000 square miles.

Dr. Forbes observes that the statements thus made show that India, known usually as the country of caste and immutable tradition, shows herself possessed, under her present rule, of a remarkable power of expansion as regards trade and commercial development. It must also be remembered that the above figures refer to the seaborne trade, and that of late years the land trade with Central Asia and Thibet has been acquiring some importance.

We may just add that British India comprises an area of nearly 1,500,000 square miles, and contains about 240 millions of inhabitants. The greater part of the country —three-fifths of the area and nearly four-fifths of the population—is placed directly under British administration; the remaining portion continues under the rule of different native princes, who however, all acknowledge the supremacy of the British Crown.

CHAPTER XVI.

ATHLETIC EXERCISES IN INDIA.

Severe exercise in a country where perspiration and biliary secretion are already in excess in Europeans, is out of the question. The exercises that one has been accustomed to at home cannot be indulged in this country with impunity. We are therefore obliged to adopt such of the active or passive exercises of the country as come nearest to our own idea of what such should be. Of these, walking and riding before sunrise and after sunset constitute the most generally engaged in. But those who wish to return to their native land with vigorous constitutions capable of really enjoying their latter days, something more than these passive exercises must be engaged in. The Moogdur, the Dundh and the Lezum are the best kinds of exercises in use in India, though it would be well for a young man to go through the whole system of Indian gymnastics as taught by the professional wrestlers.

"Nothing is so conducive," says Dr. Brett, "to a perfect capillary circulation; to the healthy action of the liver and of all the secretions, the tone of the stomach, and the sthenic state of the nervous and muscular system, enabling us to bear up against a long and sultry day." Dr. Brett in further support of this opinion states, that he "has long admired and *practised* the calisthenic exercises of the Asiatics, and attributes a better state of health and stamina, and a capability for active pursuits far superior to that enjoyed by him in England, to a systematic use of these exercises."

THE DUNDH.

There are few of our readers but must have seen or heard of the native exercise termed *Dundh.* It is not unknown in England also, for it is practised in the Royal Military Institutions there. The exercise is performed by stretching the body forward on the palms of the hand and toes of the feet, with the chest almost touching the ground, thus raising the body by curving to as high a position as the hands and feet will allow. The body is then brought down as before,

and the operation repeated in a sort of circular swinging motion up and down, without ceasing and without allowing any other part of the body to touch the ground.

Though to a casual observer this seems a most commonplace and easy movement, it is a most trying exercise. Let him that doubts it try it. Habit is however second nature in this as well as in many other things; and parties who are in the habit of going through this exercise daily can increase the number of dundhs from ten, which frequently tires a beginner, to forty, or a hundred or a hundred and fifty, without inconvenience, and to the great benefit of their health. The *Dundh* is exercised under various forms, as reveisely with the face upwards, or on one hand,—all alike tending to strengthening the muscles and back, and to opening the chest.

THE MOOGDUR OR INDIAN CLUBS.

The " Clubs" are used in India for the same purpose as Dumb Bells are in England, the expansion of the chest, and the strengthening of the muscles and joints of the arms. The clubs are made of various sizes and weights. To a beginner a pair of Moogdurs weighing eight seers will perhaps be as much as he can weild without becoming instantly tired. A habitual exercising with them however will in time enable him to use a pair weighing *twenty-four* seers; and the Hindostanee wrestlers (*Pulwans*) can play with even greater weights.

The clubs are thus used:—Taking one in each hand, the exerciser poises them in the air, then carries that in his right hand over his head and replaces it in the poised position; going through the same operation with that in the left hand. At first the motion is slowly performed, but after a little practice it increases in rapidity, and at length both hands aie worked together, the clubs crossing and recrossing each other over the head, the shoulders, &c. in rapid succession.

There is nothing in the whole round of gymnastic performances that will be found of more essential service than this exercise with Indian clubs. It calls into operation about two-thirds of the body, from the loins upwards, and these are the parts most requiring artificial practice.

LEZUM, OR THE BOW.

This is a tough bamboo bow, strung with an iron chain, between the links of which are fixed rings or thin plates of iron

or bell metal, two or three to a link. The exercise consists in bending the bow by means of the chain, to the utmost stretch of the arms, by each hand alternately. The exercise is varied under every position in which the bow can be held, whether horizontally, perpendicularly, sideways or overhead. This exercise also tends to strengthen the arms and the chest.

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OPINIONS OF THE PRESS ON VOLUME I.

From the Calcutta Englishman.

"The Good Old Days of Honorable John Company, from 1600 to 1858, compiled from newspapers and other publications by W. H. Carey," is the title of a work which has come to us from the Argus Press of Simla. This volume is the first of three, the other two not yet being published, devoted to "curious reminiscences illustrating the manners and customs of the British in India, with brief notes of the places and people of those times." The volume under notice is chiefly taken up with Calcutta, though not altogether so, and contains a very full account of the streets, the places of note, amusements, the press, Calcutta before, after, and during the siege, sanitation, law and justice, and numerous other matters, all of which are of considerable interest. A number of advertisements are given, all of them more or less characteristic. * * * *

We have confined ourselves almost entirely to the advertisements. The book abounds with curious facts of all sorts, and ought to have a ready and wide sale amongst all who have any interest in India.

From the India Railway Service Gazette (Allahabad.)

We have received the first volume of "The Good Old Days of Honorable John Company," compiled by W. H. Carey, Simla. It is a very interesting book indeed, full of interesting information. We learn from its pages that No. 5, Court House Lane, Calcutta, which said lane led into Radha Bazaar, was for sale in 1795, and was recommended because it stood within a garden, and was free from dust and noise. This is now one of the busiest and noisiest parts of Calcutta.

We shall take an early opportunity of selecting a few extracts for publication in our columns, meanwhile we recommend it to our readers for perusal. The publisher's address is W. H. Carey, Argus Press, Simla.

From the Civil and Military Gazette (Sindh).

"*The Good Old Days of Hon'ble John Company*"—by W. H. Carey, Simla (1st Vol.)

The author in the outset affably admits the contents of his work to be "compiled from newspapers and other publications," it being the result of researches extending over several years through files of old newspapers and hundreds of volumes of scarce works on India. We have no doub

Mr. Carey has had ample opportunity for compilation in his elevated "Capuan retreat," and the result of his labour is the disentombing and reproduction of incidents and curious reminiscences aptly illustrating the customs and manners of Anglo Indians in the "Good old days" when the East India Company held its sway. Judging from the volume before us, the work ought to prove very valuable for reference. Taking the Chapter on the Calcutta Press, for instance,—Chapter XV. Vol. I—we find an admirable account given therein anent the early endeavours and enterprises in Journalism and Light Literature—English and Vernacular—with some "statistics of the Press in India between 1780 and 1833." These and the "fugitive notices," with which the chapter winds up, can be referred to in the present day with peculiar interest. On the whole, we cannot but congratulate Mr. Carey on this the first portion of his compilation which must have cost him considerable trouble in the turning up of dusty and time worn tomes. We fancy it must, however, be unto him 'a labour of love,' inasmuch as it tends to perpetuate "the good old days" and ever to be revered memory of the "Honorable, glorious and grand John Company" from 1600 to 1858. Of course until Vols. II and III come to hand, we cannot treat upon the work at length, or as a whole. But judging from the volume before us, we should say that no library in India ought to be without a copy thereof. It is to be hoped that the third volume will contain a general index in order to facilitate ready reference to the different parts of the work. Subscribers may have their names registered on application to Mr. Carey, Commercial Rooms, Simla.

From the Indian Daily News (*Calcutta*).

The *Good Old Days of Honorable John Company* is the title of a book just published by Mr. W. H. Carey at Simla. It has been compiled, as he tells us, from newspapers and other publications, which few other people know where to find; and though the work was first taken up as an amusement during leisure hours, it must, before its conclusion, have involved no small amount of real labour. The first five chapters are historical, and give a cursory view of the operations of the East India Company up to the year 1756, when Calcutta was besieged by Suraj-ood-dowlah, who then ruled Bengal. Many curious facts are, however, related which will not be easily found elsewhere. The remainder of the book deals mainly with life in Calcutta during the last century, and is full of amusing anecdotes some of which are calculated to test the credence of a confiding reader. Life in those days was clearly far less civilised than it is now; there seems to have been less energy, far

less work, and much more show. The business of matrimony, on which shiploads of young ladies used to embark from their native land, is represented in a very unfavourable light. As each company arrived, the civil and military officers of the town gave a general entertainment, to which every one at all resembling a gentleman was allowed to come. The speculative ladies knew this was their last chance, and all determined to look and dance as divinely as possible. But the husbands picked up were generally men ruined in health and temper, so that newly-married wives were not long in looking out for the next mortality that would carry off their husbands, that they might return to England, and enjoy a widowhood of affluence and independence. In the matter of dress, fashion seems to have been much the same as it is now, but the mosquitoes of those days must have resembled snipe if the following statement is strictly correct. Lord Valentia writing to his friends in England in the year 1804 says:—"To be secure from the attacks of mosquitoes it is the custom to wear within doors, if one stays any time, whether for meals or any other purpose, *pasteboard round the legs.*" Sodawater was introduced into Calcutta in the year 1812, and was sold at Rs. 14 per dozen, two rupees being allowed for the returned bottles. Bengal rum was, however, advertised at from twelve annas to one rupee per gallon. And yet, it is said, that the costly *arrack* which sailors can purchase now-a-days, is poisonous. Hanging-punkahs were invented by a Government clerk towards the close of last century. These are only two or three selections made at random from a large and miscellaneous stock of notes on amusements, law and justice, military matters, a griffin's experiences, and numerous other subjects. They will convey a fair idea of the character of the book—a book which, if taken up at any odd moment and opened at any odd page, will lay before the reader some curious reminiscence, illustrating the manners and customs of the people of Calcutta during the rule of the East India Company.

From the Express, (Lucknow.)

India's Good Old Times.—Mr. W. H. Carey of Simla —a lineal descendant of the great Dr. Carey of Serampore fame—has really done good service to the present generation of Anglo-Indians, by compiling his very interesting and curious reminiscences of the India of John Company's day—when the Pagoda tree was in perennial bloom, and the 'good old times' had a substantial existence of which we who live in the latter part of the 19th century have but a very faint conception. Some years ago we noticed the official publication entitled *Selections from Calcutta Gazettes* of the closing years of the 18th and early period of the

present century, and these "Gazettes" are wonderfully interesting—taking us back, as they do, to the time when the Great French Revolution was in its infancy, carrying us on to the stirring events of the Consulate and the Empire down to Waterloo,—and in a series of these "selections" now before us all the politics of Europe are equally discussed with those matters of lesser moment in social and public life, which kept the "ditchers" amused in the days of Warren Hastings and the earlier Proconsuls who built up the British Empire in India. But Mr. Carey delves deeper still into Anglo-Indian booklore and tradition, and has managed to produce a volume of unsurpassed interest—equally instructive and amusing. In those rather remote times, the 'servants' of the Company did a good deal of trading on their own account. Passengers in the Company's ships going home were in the habit of taking with them a very large amount of 'trading stock,' which they passed as baggage; this came to the notice of the Court of Directors, who found on investigation, that in one vessel lately arrived, "the space occupied by the passengers' baggage amounted to *sixty-three tons.*" * * * * *

These records of "the good old days of Honorable John Company" are wonderfully interesting and should attract public attention. The first volume only has yet been published, and this is to be followed by two others; we should be delighted to reproduce many of the ludicrous and quaint old customs disinterred from folios and newspapers of these times by the industrious compiler, but this would be manifestly unfair to Mr. Carey. We have no hesitation, however, in recommending the work to our readers, and are sure they will vastly enjoy the peep at old time manners and customs, which are in such a convenient form arranged for their especial behoof by our antiquarian author.

From the Asian (Calcutta).

To all interested in the manners and customs of our predecessors in India, from 1600 to 1858, or during the reign of the Honorable John Company, we can cordially recommend a work just published by Mr. W. H. Carey of the Argus Press at Simla, compiled by him from newspapers and other publications, and called 'The Good Old Days of Honorable John Company." The good old doctrines that "all men are alike in their passions and feelings," and "am I not a man and a brother," receive some confirmation in these pages, wherein we find accounts of the manners and customs, as well as the business and pleasures, of our European predecessors in Calcutta. In our opinion it also affords some confirmation of Darwin's development theory, for at the fear of offending the *laudatoris temporis acti* we must

say that our present manners and customs show considerable improvement over those of our predecessors in India. The work deals more or less at length with subjects of all sorts. The author tells us: "With friends of the past we visit spots once of note in the City of Palaces, and in some stations in the upper provinces. We join with them the masque, the ball, the convivial gatherings of those days. We take part in quaint sayings and conversation of the old and the puerilities of the young. We see around us men whose names have passed down as heirlooms to posterity, and whose good deeds live in the memory of the present generation; and others whose names indeed have passed to their children, but whose memory is alone marked by pompous mausoleums in the old Park Street Cemetery in Calcutta. In imagination the morning gazette comes in with our early breakfast, and we pour over the accounts, printed in old-fashioned type, of wars, revolutions, riots, elopements, divorces, &c. We take our stand among the men of the Turf. We hear the betting around the Race Stand, among men in health and vigor, who are staking, as it were, their very existence on the chances of the running. We turn and wend our way to the counting house, and there are witness to the betting of another class of speculators, the exporters of indigo, sugars, silks, and other Indian goods, who have staked their all in shiploads of one or more of these articles, and are now in doubt and uncertainty as to what might be the state of the market in England on the arrival of their ventures. The people in India gambled in lotteries then; the Press was gagged and unable to offer an independent opinion. Adventurers were not allowed to land without a permit from the Honorable Court in Leadenhall Street; and those who had licenses were not permitted to go more then ten miles distant from Calcutta, without another permit."

In our limited space it is impossible for us even to touch upon all the variety of subjects just mentioned, so we purpose to confine ourselves to only a few of his remarks on amusements and racing. * * * * *

Here we must take leave of our author, but we cordially recommend any one who wants a book wherewith to pass a pleasant day to purchase a copy.

From the Civil and Military Gazette (Lahore).

* * * It is in illustration of the history, manners, and customs of that ancient India, which is still so modern, that Mr. W. H. Carey, of Simla, has published the first of a series of three volumes entitled—"The Good Old Days of Honorable John Company, being curious reminiscences, illustrating manners and customs of the British in India

during the rule of the East India Company, from 1600 to 1858, with brief notices of places and people of those times." It may be objected that a collection of extracts from contemporary newspapers, pamphlets, &c., can scarcely be described with propriety as "curious reminiscences," but that is perhaps more Mr. Carey's business than ours; and it is undeniable that this Indian Scrap-book promises to be of unusual fulness and interest. Mr. Carey's four first chapters consist of a rapid sketch of European adventure in India, till about the middle of the eighteenth century, when his work becomes more that of the scissors than of the pen, and is composed of extracts, advertisements, and other fragments, classified under various headings. The compiler modestly says he does not aspire to be considered a historian, nor does he indulge in reflections or generalisations, but the unassuming character of his work in no way detracts from its value. * * * *

We hope to return to Mr. Carey's interesting book, and to give a few samples of his collections. It would be ungracious to criticise very closely a work offered in so modest and sincere a spirit; but its value would be increased by more careful classification, and a fuller index. Thus, under "scientific and useful" appears a heterogeneous enumeration of pamphlets and books, on languages, law, belles-letters, almanacs, directories, maps, and army lists. Care has been taken to give as far as possible the date of each extract; and it is to be hoped that the succeeding volumes, which will doubtless show the great and wholesome change that came over the Anglo-Indian community, will display the same accuracy.

From the Pioneer, (Allahabad.)

This work is an Olla Podrida of more or less interesting matter, the materials being, as the author says, gathered together during researches of several years from files of old newspapers and volumes of old works on India. The paragraphs thus collected have, by the aid of paste and scissors, been thrown into a rough and rude form, the only arrangement being in chapters relating to the most miscellaneous subjects, arranged apparently anyhow, and without any particular regard to dates. The author, or rather compiler, proceeds by "leaps and bounds" backwards and forwards through the centuries, so that epochs and subjects become considerably mixed in the mind of the reader after perusing a few pages. As the present issue is only volume I, and as we are threatened in a kind of appendix with volumes II and III, we hope that Mr. Carey may be induced in the succeeding volumes to sort his materials in something like chronological order, and to arrange the subjects according to some kind of plan, so that there

may be some connection between them. one thing naturally leading to another. In spite of these defects the forgiving reader cannot fail to find in the 292 pages of volume I a great many curious paragraphs, and his interest will be roused in a number of odd incidents and strange particulars relating to the old days of Anglo-India.

From a Correspondent of the Delhi Gazette.

Mr. W. H. Carey, a grandson of the celebrated Doctor Carey of the Serampore mission, has just issued from the press, the first volume of an excellent work under the title of "Good Old Days of Hon'ble John Company." Apart from the contents being highly interesting to the general reader, many portions give the book the character of a work of ready reference, on matters connected with the olden time in particular, besides being replete with information both varied and versatile, and in numerous instances quite quaint in their nature. Mr. Carey deserves great credit for his indefatigable exertions in producing such a work, evincing so much patience and perseverance in its compilation, involving, as it must have done, the necessity of wading through many a mass of papers, and the perusal of a great number of books, in order to arrive at and derive, the vast amount of information and interesting reading the volume contains.